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Gambling Attitudes Associated with Problem Gambling: The Cohort Effect of Baby Boomers

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Lakehead University

August 31<sup>st</sup>, 2014

Thesis

Submitted in partial fulfillment of the degree of

Master of Arts in Clinical Psychology

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# GAMBLING ATTITUDES ASSOCIATED WITH PROBLEM GAMBLING

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# GAMBLING ATTITUDES ASSOCIATED WITH PROBLEM GAMBLING

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# GAMBLING ATTITUDES ASSOCIATED WITH PROBLEM GAMBLING

## Abstract

The current study sought to examine the effects of gambling attitudes and beliefs on problem gambling behaviour across three cohorts, namely Generation X, Baby Boomers, and the Silent Generation. Individuals from Northern and Southern Ontario completed either an online or paper version of a questionnaire that included the Canadian Problem Gambling Index (CPGI) and South Oaks Gambling Screen (SOGS) to measure problem gambling, the Gambling Attitudes Scales (GAS) to measure gambling attitudes, and the Gambling Attitudes and Beliefs Survey (GABS), Gamblers' Beliefs Questionnaire (GBQ), and Gambling Related Cognitions Scale (GRCS) to measure gambling beliefs. A sample of 308 participants consisted of 101 individuals from Generation X, 139 from the Baby Boom cohort, and 68 from the Silent Generation. Analyses focused on differences between Baby Boomers and their surrounding cohorts, but especially on differences between the older two cohorts. For Baby Boomers, higher scores on the GBQ Luck/Perseverance scale and GRCS Illusion of Control scale were associated with higher levels of problem gambling than the Silent Generation. However, Generation X's scores on GBQ Luck/Perseverance were associated with higher levels of problem gambling than the Baby Boom cohort. Furthermore, higher levels of the Perceived Inability to Stop Gambling variable on the GRCS was more associated with problem gambling status in the Baby Boom cohort than the Silent Generation. Attitudes associated with problem gambling were not found to differ among cohorts. These results suggest that while cohorts may not differ in types or levels of distorted beliefs, they differ in how such distortions relate to problem gambling. Therefore, according to our results, Baby Boomers who have distortions about luck or illusions of control over gambling have higher levels of problem gambling than those with similar distortions from the Silent Generation.

## Gambling Attitudes Associated with Problem Gambling:

### The Cohort Effect of Baby Boomers

In 1969, Canada's Criminal Code was amended to allow government-run sweepstakes and lotteries, at a time when gambling, especially in the United States, was becoming a socially acceptable pastime (Campbell, 2005; Centre for Addiction and Mental Health [CAMH], 2012). However, gambling today is very different from gambling in the 1960s; today we have more opportunities, greater incentives, and advanced technology. Indeed as technology has advanced gambling methods have become more diverse and easier to access. Scratch tickets and instant lotteries are available at convenience stores, and within 2014 Ontario is expected to have provincially sanctioned internet gambling (Ontario Lottery and Gaming Corporation [OLG], 2013). Older adults have in large part been targeted by the gambling industry and with a more technologically knowledgeable Baby Boom generation beginning to enter into retirement, there may be implications of such increased accessibility to gambling (Lemay, Bakich, & Fontaine, 2006; Veenhof & Timusk, 2009)? Older adults are an especially vulnerable population since many live on a fixed income and it is difficult for them to earn back lost income (Lemay et al. 2006). Therefore, it is important to understand how the Baby Boom cohort may differ from previous generations of older adults in regards to gambling behaviours and cognitions. The purpose of the current study was to determine the attitudes and beliefs that Baby Boomers hold towards gambling, and the associations between such beliefs and attitudes with problem gambling. Identifying gambling attitudes and beliefs may aid in identifying individuals at risk of problem gambling and help direct preventative measures and effective treatment programs.

### **The Baby Boomers and Surrounding Cohorts**

The term cohort refers to people who are born within a certain time frame and who are consequently subject to similar environmental influences. A cohort effect therefore occurs when individuals from a cohort are influenced, morally, behaviourally, or otherwise, by such environmental similarities (Ryder, 1965). These effects should be relatively stable across the lifespan amongst individuals from the same cohort (Ryder, 1965). When discussing cohorts it is also relevant to consider the effects of age. While cohorts are influenced by similar conditions in which individuals are born and exposed throughout their lifetime, age effects are those found regardless of the cohort being measured. Therefore a significant effect found within a group of older adults will be the same in another group of older adults years later if the effect is a pure “age” or developmental effect. In studying cohorts often age is an inevitable factor that must be considered when evaluating results (Ryder, 1965). As an example, consider Internet familiarity as a cohort effect. Given that older adults of present day had limited experience with the Internet in their formative years they may be less familiar with it than younger individuals; however this effect is not due to an age effect as younger adults will carry their familiarity with the Internet into older adulthood.

From 1946 to 1965, Canada experienced a rapid increase in the number of births per year, and these “Baby Boomers” contribute to an aging population. According to Statistics Canada, as of the 2011 census, 9.6 million Canadians are classified as Baby Boomers, constituting 29% of the total population. The generation before the Baby Boomers consists of a group of individuals largely referred to as the Silent Generation, but also known as the Mature Generation, the Veterans, or the Elders (Adams, 2010; Jianakoplos & Bernasek, 2006). The Silent Generation is defined within the boundaries of those born between 1925 and 1945. Therefore, they were born

in times of great economic distress, the Great Depression, and up until the end of World War II. The cohort after the Baby Boom is referred to as Generation X. These individuals were born between 1966 and 1971, and are also sometimes referred to as the Baby Busters (Statistics Canada, 2012). Generation X is largely defined by competition between them and the Baby Boomers who greatly outnumbered them (Statistics Canada, 2012). For example, Generation X had difficulty in entering the workforce both due to a recession and the influx of Baby Boomers entering the labour market before them (Statistics Canada, 2012).

We have yet to see the full effects of such a large group of people entering into retirement as the Baby Boomers. As of 2014 the oldest of the Baby Boom generation was 68 while the youngest were 49. Galarneau (1994) described two waves of Baby Boomers in order to differentiate between economic conditions affecting employment rates. Specifically, Galarneau's (1994) first wave consisted of those born between 1946 and 1955, while the second wave consisted of those born between 1956 and 1965. This second wave encountered more competition in entering the labour market given the larger first wave which reached working ages first. Women especially were joining the labour market in unprecedented numbers, with 54% of first wave Baby Boom women employed by 1971. By 1981 the second wave of Baby Boom women had entered the labour market, with 70% opting for employment outside the home (Galarneau, 1994). With women more likely than previous cohorts to have been a part of the work force, a majority of Baby Boomers entering into retirement will for the first time be unemployed per se and have a large amount of spare time available to fill. Although individuals tend to plan financially for their retirement, few seem to plan for the additional free time they will encounter upon retirement from full-time careers, an approximated 7.7 hours/day for adults over 65 (Lemay et al., 2006). According to Lemay et al. (2006), leisure wellness is important to

consider in making the transition into retirement. Individuals who do not plan a healthy and balanced retirement, according to Lemay et al. (2006), may encounter difficulties such as social isolation, boredom, loss of sense of connection and belonging, unhealthy changes in relationships, and loss of structure and purpose.

Differences between cohorts were noted by a panel of the National Endowment for Financial Education; they concluded that there are core beliefs and value systems which differ between Baby Boomers and the Silent Generation (Anthes & Lee, 2001). Adams (2010) discusses some of these differences in values and beliefs between cohorts, separating Baby Boomers into four “tribes” or clusters identified via principal component and factor analyses, including Disengaged Darwinists (48% of the cohort), Connected Enthusiasts (21%), Autonomous Rebels (19%), and Anxious Communitarians (12%). Commonalities in Disengaged Darwinists include striving for financial independence and stability/security; they tend to have higher self-interest and believe in natural consequences; they do not hold many religious values, however their views on equality tend to be traditional due to their own self-interests. Autonomous Rebels strive for individual autonomy and personal fulfillment; they tend to have higher incomes, more education, and less religiosity; they are suspicious of authority and tend to have pro-environmental views, as well as liberal views regarding gender and ethnic equality. Anxious Communitarians can be described as motivated by anxiousness and striving for respect; they tend to defer to authority and are focused on family; they are large consumerists and they tend to be more traditional in their views regarding family and religion. Finally, Connected Enthusiasts include individuals who are very sociable and experience-seeking/risk-taking, they are large consumerists, and they are concerned about their youthfulness, striving to maintain

their appearance. According to Adams (2010) these clusters have shown to be stable upon retest, with a test-retest interval of thirteen years.

Notable, relevant, differences between the majority of Baby Boomers and the Silent Generation, outlined by Adams (2010), include higher levels of education, a willingness to take on debt, even entering into retirement with debt, fewer children, and therefore more disposable income, as well as less religiosity overall, especially less tendency towards organized religion. Overall, the majority of the Silent Generation can be described as traditionalists and are known to be much more homogenous in their values across the cohort than the Baby Boomers (Adams, 2010).

In addition, Baby Boomers show differences from the Generation X cohort. Jianakoplos and Bernasek (2006) showed that predicted financial risk-taking is higher for the Baby Boom cohort when compared to Generation X across the life span. Such a finding goes against the well-known effect of risk-taking gradually decreasing with age, peaking in young adulthood. Roberts and Manolis (2000) also discuss differences in marketing attitudes between Generation X and the Baby Boom cohort, concluding that the two groups have differing attitudes toward advertising. Furthermore, they found that both cohorts show higher levels of compulsive buying than previously estimated, with 7% of Baby Boomers labelled as compulsive buyers. Compulsive buying, similar to problem gambling, can include difficulties with impulse control, resulting in comorbidity amongst the two disorders (Black, Shaw & Blum, 2010; Roberts & Manolis, 2000).

### **Gambling**

Gambling is defined as “risking something of value on the outcome of an event when the probability of winning is less than certain” (Korn & Shaffer, 1999, p. 292). While gambling

behaviour can be defined on a continuum from no gambling to frequent gambling, researchers, clinicians, and policy makers tend to place individuals into categories based on the nature of their gambling activity (Shaffer & Korn, 2002). Many individuals who gamble can be classified as non-problem gamblers, also known as social or recreational gamblers; these individuals may gamble regularly and wager large amounts of money, but they experience little to no adverse consequences of gambling (Ferris & Wynne, 2001). However, for some, gambling can become a problem when adverse consequences occur and individuals may feel that they have “lost control” of their gambling (Ferris & Wynne, 2001). Gamblers can further be classified with a specific diagnosis of gambling disorder (formerly known as pathological gambling) according to the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition, (DSM-5) criteria (American Psychiatric Association, 2013); whereas problem gamblers may not meet full requirements for a psychiatric diagnosis, those with gambling disorder have problem gambling behaviours that meet criteria for a diagnosis and cause clinically significant impairment or distress.

**Theories of Problem Gambling.** The pathways model provides a means to characterize the development of problem gambling and can help us understand what leads to and maintains it (Blaszczynski & Nower, 2002). Specifically, Blaszczynski and Nower (2002) propose a biopsychosocial model of pathological gambling. They describe three general groups of gamblers: (1) those who are behaviourally-conditioned to gamble, (2) those who are emotionally vulnerable, and (3) antisocial, impulsive problem gamblers. The behaviourally-conditioned gambling group is theorized to include those without premorbid psychopathology, who have poor judgement in gambling due to learned behaviours (i.e., excitement, arousal, cognitive schemas), but who do not have impaired control. In contrast, emotionally vulnerable gamblers

present with premorbid difficulties such as anxiety, depression, family conflict, negative life events, or poor coping skills; these individuals are motivated to gamble in order to regulate emotion and meet emotional needs. Finally, the antisocial/impulsive-type gambling group consists of individuals who have a neurological predisposition and history of impulsive and antisocial tendencies. In addition, all three of these problem gambler groups are subject to common factors, including ecological (i.e., availability and accessibility to gambling), operant and classical conditioning (e.g., development of habitual gambling patterns leading to increased gambling), as well as faulty cognitive processes (e.g., irrational beliefs, illusion of control) (Blaszczynski & Nower, 2002). The focus of the current study was on the latter of faulty cognitive processes in order to examine potential differences in the maintenance of problem gambling between cohorts.

Tirachaimongkol, Jackson, and Tomnay (2010) expanded on the pathways model, as well as the risk and protective factors model by Dickson, Derevensky, and Gupta (2002), in order to apply these theories to late-life problem gamblers. The model by Dickson et al. (2002) specifically addresses problem gambling in adolescents by looking at risk and protective factors which interact with biopsychosocial factors. Based on a review of the literature and the above theoretical models, Tirachaimongkol et al. (2010) identified three clusters of late-life gamblers including those with (1) individual vulnerability factors, (2) social and environmental factors, and (3) behavioural regulation factors. Although similar in many ways to the types of problem gamblers proposed in the pathways model, risk factors tailored to the experiences of a late-life, or older adult, gambler are also included. For example, older adults in the individual vulnerability group are likely to experience a sense of urgency or apathy towards gambling in response to negative events or emotions. Furthermore, individuals in the social and



environmental factors group experience an unsupportive environment and tend to have fewer resources; as such they tend to seek support through gambling. Finally, the behavioural regulation group includes those similar to the impulsivity group of the pathways model in that they have a predisposed disinhibition, however the reasons for such difficulties may include changes in the brain associated with aging, pharmaceuticals, or substance abuse.

**Attitudes and Beliefs Associated with Problem Gambling.** Problem gambling is associated with certain attitudes and cognitive distortions which facilitate the maintenance of the problem behaviours. In order to examine the attitudes and beliefs that are associated with problem gambling it is necessary to first discuss operational definitions of each. Specifically, attitudes refer to positive or negative views of gambling, such as the social acceptability of gambling and views towards specific types of gambling. Kassinove (1998) stated that positive attitudes toward gambling may suggest a readiness to gamble and, in addition, that younger adults' highly positive attitudes toward gambling may contribute to the development of problem gambling. They further examined other types of attitudes outside of gambling, such as religious affiliation, political attitudes, and thrill-seeking attitudes, in order to determine any relationship to gambling attitudes. It was found that religiosity is associated with more negative views toward gambling and that thrill-seeking was associated with positive attitudes toward gambling; there was no relationship between political and gambling attitudes.

While attitudes are the views regarding gambling, beliefs relate to specific underlying cognitions about gambling, for example, beliefs about locus of control and luck. For problem gamblers, beliefs can represent various cognitive distortions. Steenbergh, Myers, May, and Whelan (2002) described cognitive distortions common among problem gamblers. One type of cognitive distortion is an illusion of control, where individuals believe that they can influence the

outcome of a chance-determined event. Another belief that problem gamblers may hold is called the gambler's fallacy, where future outcomes are predicted based on past outcomes in a chance-determined event. Toneatto (1999) provided a literature review of the cognitive distortions that present with problem gambling and detailed many specific types of cognitive distortions.

Specifically, Toneatto (1999) described the cognitive distortion of magnifying one's gambling skills and minimizing the skills of other gamblers. Furthermore, numerous types of superstitious beliefs are described. Talismanic superstitions refer to the belief that certain objects increase the probability of winning or that certain personally significant numbers affect the outcome of gambling. Secondly, behavioural superstitions include acts or rituals that are believed to increase the probability of winning; this can involve location of gambling, verbal and non-verbal behaviours, or entrapment (the belief that one must continue to play in order to win despite continuous losing). Finally, cognitive superstitions are those in which an individual believes that his/her mental state can increase chances of winning.

In addition to superstitions, Toneatto (1999) outlined numerous biases that have been shown to contribute to problem gambling behaviour. Specifically, attributional bias refers to the tendency to attribute wins to dispositional factors or to explain losses by situational factors. Chasing is a bias which involves the belief that only by continuing to gamble is one able to earn back lost wagers. Furthermore, the anthropomorphism bias is the tendency to attribute human characteristics to gambling objects, for example projecting emotions onto an inanimate/non-human object such as kissing cards when winning or hitting a slot machine when losing. Finally, the learning bias involves reframing losses as necessary learning experiences which can increase their chances of winning in the future, while the hindsight bias refers to evaluating wins as skill and losses as something which they could have anticipated and avoided.

While superstitions and biases colour how problem gamblers perceive their gambling experience, Toneatto (1999) described selective memory as the overestimation of gambling wins and underestimation of losses. Furthermore, temporal telescoping refers to a gambler's view that a win is closer rather than farther away. Predictive skill is the cognition that one has the ability to predict future outcomes, whether based on subjective/gut feelings or external cues such as omens or other gamblers' behaviour, similar to a combination of Steenbergh et al.'s (2002) illusion of control and gamblers' fallacy. Furthermore, and somewhat related to predictive skill, there is the illusion of control over luck. Illusions of control regarding luck can include: believing that luck is uncontrollable (oscillating through periods of good and bad), that luck is controllable and can be changed (e.g., through superstitious behaviours), that luck is a trait that one may possess, or that luck is contagious (luck in other areas is predictive of luck in gambling). The final cognitive distortion discussed by Toneatto (1999) is the illusory correlation in which an individual may correlate features in the environment with either winning or losing and attribute causality, for example, watching a sporting event on which one has wagered will affect the outcome of the bet; therefore if watching "produces" winning the individual will watch each game they bet on.

Goodie and Fortune (2013) undertook a meta-analysis examining numerous forms of cognitive distortions in pathological gambling. They found that cognitive distortions measured by various instruments usually involve two distinct types of distortions, namely illusions of control and gamblers' fallacy. As discussed above, illusions of control involve believing that one has more control over the outcome of events than is warranted, however Goodie and Fortune (2013) describe the gambler's fallacy as believing that a desired outcome becomes more likely as time and gambling progresses. This definition of gamblers' fallacy is similar to a combination of

Toneatto's (1999) temporal telescoping and chasing. Goodie and Fortune (2013) found that both illusions of control and gamblers' fallacy were more prevalent in pathological gamblers than non-pathological gamblers and that this effect was more robust for gamblers' fallacy than illusions of control. As a result, these authors suggested that future research should focus on the impact of particular distortions on gambling behaviour.

Joukhador, MacCallium, and Blaszczynski (2003) looked at specific cognitive distortions in problem gamblers versus social gamblers. They argued that a lack of such differences would theoretically undermine the validity of a cognitive model to explaining gambling problems since individuals with non-problem gambling would show similar distortion to problem-gamblers. They found that problem gamblers endorsed more dysfunctional beliefs than social gamblers overall, with the exception of the "denial" variable. Denial within the Joukhador et al. (2003) study included two items focusing on the belief that the individual did not have a gambling problem. Therefore, a finding that social and problem gamblers do not differ in denial suggests that denial is not a reliable measure of discriminating between the two groups.

Myrseth, Brunborg, and Eidem (2010) focused on differences in cognitive distortions and found that irrational beliefs varied in pathological gamblers depending on preferred game type. Specifically, upon examining Luck/Perseverance scores and Illusion of Control scores, from the Gamblers' Beliefs Questionnaire (GBQ), it was found that pathological gamblers who preferred games of perceived skill had higher levels of illusion of control than those who preferred games of chance. In addition, pathological and non-pathological gamblers did not show differences in terms of either type of cognitive distortion when preference was for games of skill. This suggests that game type may have an effect on the types of irrational beliefs that pathological gamblers display. However, given findings by McDowall (2009), it should be noted that the

sample in the Myrseth et al. (2010) study consisted of over 85% males. McDowell (2009) found that men had lower levels of cognitive distortion in games of perceived skill and higher levels in games of chance, whereas women had lower levels of cognitive distortion in games of chance and higher in those with perceived skill.

Finally, Tang and Wu (2012) studied the effects of cognitive distortions in three different age groups of Chinese non-problem gamblers, probable problem gamblers, and probable pathological gamblers. Specifically, their study included youth aged 11-17, young adults aged 18-25, and mature adults aged 26 and over. Results showed interaction effects indicating that in the probable problem gambling group, youth had more cognitive distortions than young or mature adults, especially biases in expecting, predicting, and controlling gambling outcomes. Conversely, youth had fewer cognitive distortions compared with mature adults within the non-problem gambling group.

### **Gambling, Age, and Cohorts**

**Theories of Problem Gambling, Age, and Cohorts.** A number of studies have examined age and age-cohort differences in gambling behaviour and gambling-related cognitive distortions. Burge, Pietrzak, Molina, and Petry (2004) found that an earlier onset of gambling is associated with more severe problem gambling (i.e., more frequent wagers), as well as more medical problems and psychiatric difficulties. While it is estimated that 70.7% of the total Canadian population gambles, Papoff and Norris (2009) found that 80.1% of a sample of Baby Boomers gamble (Wood & Williams, 2009). This research suggests that the prevalence rate for gambling in Baby Boomers is higher than the general population and this is considering that at the time of the Papoff and Norris study the oldest of the Baby Boom cohort was only 63. As the Boomers begin to retire and their free-time increases, it is plausible that this prevalence rate will

also increase, potentially leading to greater prevalence of problem gambling behaviour. Foot and Stoffman (1998) also predict that as Baby Boomers age they may engage in increased gambling activity.

Additionally, boredom can become an issue in retirement. With the Baby Boom cohort entering into their retirement years it will be the first time that many will be encountering such a large amount of leisure time since prior to entering the work force. Unlike the Silent Generation, Baby Boomer women participated in the work force in unprecedented numbers, therefore both men and women will experience increased leisure time. According to Blaszczynski and Nower (2002), boredom can be a factor in emotional vulnerability related to problem gambling, mainly due to a relationship with depressive symptomatology. As a result, poor tolerance of boredom is common in problem gamblers and is especially related to the cluster three antisocial, impulsive problem gamblers demonstrated in the pathways model. In looking specifically at late-life gamblers, Tirachaimongkol et al. (2010) consider that factors such as unstructured time and limited entertainment options may indeed play a role in perpetuating the cycle of problem gambling.

Baby Boomers have grown up in an era when gambling was no longer taboo and even seen as a positive and enjoyable past-time (CAMH, 2012). Indeed a core element in all three pathways to gambling, as proposed by Blaszczynski and Nower (2002), are ecological factors which include the acceptability of gambling. Specifically, as policies and regulations become more lenient towards gambling, it fosters an environment where gambling becomes increasingly socially acceptable and even encouraged. With Ontario and other provinces introducing Internet gambling, we can probably expect an increase in the acceptability of gambling as a pastime. In fact, a survey of older adults, aged 60 and over, was performed in 2004 and found that 73.5% of

participants had gambled in the past year (Wiebe et al., 2004). Such prevalence rates are somewhat surprising since these individuals (ages 69 + by 2014) would mostly consist of the Silent Generation, a cohort that did not experience gambling as a legalized and socially accepted activity until later in their lifetime. Given the prevalence rates of gambling in the Silent Generation it may be reasonable to expect that an even higher percentage of Baby Boomers, a cohort which has experienced socially acceptable gambling for a longer period of their lives, will have higher rates of gambling upon retirement.

In relation to older adults and gambling, von Hippel et al. (2009) found that individuals with deficits in executive functioning had greater self-reported gambling problems. They also found that problem gambling in older adults was associated with higher levels of depression and that this association was mediated by greater financial distress. Such findings are in line with the pathways model of late-life gamblers, where Tirachaimongkol et al. (2010) describe a group of individuals with behavioural regulation problems due to age-related neurological changes. Indeed Blaszczynski and Nower's (2002) antisocial/impulsive group of gamblers, the group most similar to Tirachaimongkol et al.'s (2010) behaviour regulation cluster, tend to have a higher level of severity of problem gambling than other groups.

Baby Boomers have been shown to have higher financial risk-taking than Generation X. From a pathways model perspective, risk-taking represents an emotional vulnerability which is a key aspect of the emotionally-vulnerable cluster and the antisocial-impulsive problem gambling cluster. Cluster three especially has a greater level of impulsivity and disinhibition, which weakens behavioural control (Blaszczynski & Nower, 2002). Additionally, Tirachaimongkol et al. (2010) discuss the finding that late-life gamblers have increased disinhibition due to biological aging factors and pharmacological side-effects (e.g., side-effects of dopamine agonists

in treatment of Parkinson's Disease, interactions between medications, etc.). They further note the finding that financial crises are often associated with late-life problem gambling. A risk-taking cohort effect, in addition to increased disinhibition, could relate to Baby Boomers showing increased gambling and problem gambling in retirement.

**Technology, Gambling, and Cohorts.** Gambling is changing, with an increasing availability of online or Internet gambling. Adults of the Baby Boom cohort are much more computer literate and Internet aware than previous generations of adults, with 77.5% of Baby Boomers using the Internet in 2007 compared to 33% of older adults who were not from the Baby Boom cohort (Veenhof & Timusk, 2009). With this increase in Internet use and the availability of Internet gambling comes increased risk according to findings by Wood and Williams (2009). These researchers found that the prevalence for moderate and severe problem gambling for Internet gamblers was 17.1% versus 4.1% for non-Internet gamblers. Since Baby Boomers are increasingly comfortable with the Internet and Internet gambling provides increased risk amongst gamblers, the current study included questions addressing acceptance of such forms of gambling in the demographics portion of the questionnaire.

**Sex and Age Differences in Gambling.** Sex and age have each been widely studied within the gambling literature and some studies have found an age by sex interaction effect. For example, Petry (2002) found that middle and older age gamblers were more likely to be female than were younger gamblers. They also found that older female gamblers wagered the greatest amounts during the month prior to seeking treatment. Furthermore, Petry (2002), as well as Nower and Blaszczynski (2008), found that older women had a later onset of gambling than older men. Not only has onset of gambling been shown to differ among older males and females, Wiebe et al. (2004) found that sex is strongly associated with participation in different



types of gambling activities in older adults. Their findings indicate that older men tend to prefer gambling which involves a perceived skill component (e.g., casino table games, speculative investments) while women preferred gambling that tends to be more random and involve less of a perceived skill component (e.g., bingo, slot machines). Young and Stevens (2009) found that across all age groups men tended to prefer games of competition, while women and older individuals tended to prefer games of chance. Petry (2003) also found that this sex by gambling game interaction may interact with age. Specifically, this researcher found that younger males tended to prefer sports betting (mean age was 34), slot machines were more preferred by those who were older (mean age was 48) and were more likely to be female, individuals who participated in horse/dog races were most likely to be older males, and males preferred card games over females (73.4 % males). Based on the research, sex and age seem to have an effect on preferred game type.

McDowall (2009) investigated sex differences in gambling cognitions, however no differences were found between the cognitions of males and females for gambling in general. It was only when perceived skill (non-random games) was analyzed that sex differences became apparent; further suggesting that the type of gambling activity contributes to an interaction effect with sex. Specifically, McDowall (2009) found that women displayed higher cognitive distortions than men when games requiring a perceived skill were the preferred gambling activity, while men who preferred lottery and games with perceived randomness displayed more dysfunctional beliefs than women with those preferences. Finally, McDowall (2009) also found sex differences when examining locus of control, with women more likely to experience an external locus of control and men more likely to experience control internally.

**Age, Cohorts, and Attitudes and Beliefs about Gambling.** Wiebe et al. (2004) studied correlates of gambling in older adults and found that they endorsed winning money as the predominant benefit to gambling. In their study, Wiebe et al. reported that 33.9 % of older adults endorsed winning money as the main benefit of gambling while 30.7% reported that the main benefit of gambling was excitement/fun. Beaudoin and Cox (1999) have also found that seeing gambling as a way to “make money” versus solely as entertainment, has been shown to be associated with those presenting for treatment with problem gambling. Believing that gambling can be a way to earn money represents a form of cognitive distortion since one is usually more likely to lose money than to gain money when gambling. Specifically, an illusion of control over the gambling game can be seen when an individual plans to win money rather than expecting a loss.

Furthermore, Papoff (2007) studied risk factors and beliefs specific to Baby Boomers purchasing of instant-win tickets. Papoff (2007) performed two studies. The first study involved interviewing problem gambler counsellors within the structure of the Canadian Problem Gambling Index (CPGI). Counsellors pointed to several faulty beliefs common in problem gamblers, including the belief that charity-sponsored ticket purchasing and government-regulated lottery tickets are not gambling activities. Given these findings, a second study analyzed data from the Canadian Community Health Survey (CCHS; 2002). Findings indicated three risk factors of instant-win ticket problem gambling including: other types of gambling activities, denial of gambling activity, and minimizing the amount spent on gambling and financial consequences due to gambling. Papoff (2007) reported that 27% of individuals who claimed to be non-gamblers in the CCHS (2002) actually participated in instant ticket purchasing weekly

and 34% participated monthly; Statistics Canada, however, treated self-reported non-gamblers as non-problem gamblers.

In addition, Papoff (2007) identified cognitive distortions related to instant-win ticket gambling in Baby Boomers. Specifically, one third of Baby Boomers who spent money on games of chance did not view themselves as gamblers, suggesting a distortion in the definition of gambling itself. This is of concern because Papoff (2007) found that three-quarters of Baby Boomers who identified as problem gamblers were also instant-win ticket gamblers. Furthermore, Papoff (2007) stated that instant-win ticket spending may be distorted since purchasing is often done at convenience stores and other venues where multiple products can be bought in conjunction with tickets.

Although not specifically measuring cognitive distortions, findings by Desai, Maciejewski, Dausey, Caldarone, and Potenza (2004) are relevant given possible implications in regards to dysfunctional beliefs. Desai et al. (2004) studied health perceptions in younger and older adults, with individuals aged 18-64 considered younger adults and aged 65 and over considered older adults. This older generation would likely have consisted mainly of individuals from the Silent Generation, although this distinction was not made in the study and birth year ranges were not provided. Desai et al. (2004) found that these older adults, despite gambling more frequently, reporting more alcohol use, and reporting higher lifetime prevalence of major depressive disorder, actually reported higher perceived health and well-being than younger adults. It may be that the older generation of individuals, harbour more cognitive distortions with regards to health consequences. Furthermore, older adults were also significantly more likely to report larger wins and gambling to win money as a motivation than younger adults. Again, such results may be indicative of greater cognitive distortions in the older individuals

since it is unlikely that older adults win more money than younger people (especially concerning games of chance, although preferred gambling activity was not measured) and since gambling as a way to win money is an unrealistic goal.

It is possible that the Baby Boom cohort differs in their beliefs and attitudes associated with problem gambling. For example, Blaszczynski and Nower's (2002) pathways model, propose that cognitive factors, such as faulty beliefs and distortions, are a core factor in all three pathways to problem gambling. Specifically, in relation to late-life gamblers, Tirachaimongkol et al. (2010) further indicate that when unhelpful beliefs and erroneous perceptions occur they may become internalized and contribute to gambling in Social and Environmental Factor gamblers.

### **The Present Study**

Baby Boomers may be different from other cohorts, especially the Silent Generation in their attitudes, values, and gambling behaviours. As the Baby Boomers begin to retire and enjoy more free time after a lifetime of employment, gambling may be seen as an exciting and enjoyable recreational activity. It has been shown that some gamblers seem to hold certain attitudes and beliefs that are associated with problem gambling. The aim in the current study was therefore to examine these beliefs and attitudes in order to determine how they associate with problem gambling within the Baby Boom cohort compared to surrounding generations, namely Generation X and the Silent Generation.

### **Hypothesis 1**

Those from the Baby Boom cohort were expected to hold more positive attitudes or greater acceptability towards gambling compared to the Silent Generation as they have experienced gambling as an acceptable form of recreation for a longer period of time. In

addition, this expectation was supported by findings that religiosity is associated with more negative views towards gambling (Kassinove, 1998); thus since Baby Boomers hold less religious values as a group than the Silent Generation their views towards gambling were expected to be more positive in comparison (Adams, 2010). Conversely, it was anticipated that Baby Boomers would still retain more religious beliefs than Generation X, who have also experienced gambling as a social context for even longer; therefore Generation X was hypothesized to show more positive attitudes towards gambling than Baby Boomers.

## **Hypothesis 2**

We sought to determine whether specific irrational beliefs or differing levels of cognitive distortions associated with problem gambling varied between Baby Boomers and other cohorts. While this prediction was largely exploratory some specific hypotheses were made in regards to specific cognitive distortions.

**2. a.** It was expected, based on findings by Desai et al. (2004), that Baby Boomers would report smaller wins than the Silent Generation. Furthermore, it was thought that Baby Boomers would not report gambling as a way to make money compared to the Silent Generation. The idea of underestimating losses and overestimating wins is referred to as a selective memory distortion (Toneatto, 1999). In contrast, the idea that gambling can be a way to make money can be seen as a cognitive distortion because it involves an illusion of control over outcomes. Many of the measures to be discussed below contain items measuring selective memory distortions, as well as illusions of control; thus it was expected that the Silent Generation would have higher scores on such items than Baby Boomers.

**2. b.** In addition, based on Desai et al.'s (2004) findings regarding health and well-being it was hypothesized that Baby Boomers and Generation X would report more consequences to

gambling than those from the Silent Generation. Consequences could have included financial consequences, familial consequences, or health/mental health consequences as examined by several measures in the current study.

**2. c.** It was expected that Baby Boomers would have fewer cognitive distortions in regards to luck and rituals than the Silent Generation, but perhaps more luck distortions than Generation X. Given that Baby Boomers are not as religious as the Silent Generation, it was possible that they would be more inclined to believe in free will and random outcomes versus an external locus of control (e.g., god, karma, etc.) (Adams, 2010). Several of the measures used within the current study contain items and scales measuring beliefs about luck. Specific measures in relation to each hypothesis are further discussed in the Data Analyses section of the paper.

### **Hypothesis 3**

Based on research by Jianakoplos and Bernasek (2006), it was expected that Baby Boomers would demonstrate the greatest financial risk-taking behaviours of the three cohorts, including wagering larger amounts and more frequent chasing behaviour. Chasing behaviour was measured both by belief questionnaires and problem gambling. Furthermore, specific wagers on different gambling activities were measured and compared to gross household income in order to evaluate “risk”.

### **Hypothesis 4**

Finally, it was expected that Baby Boomers would differ from other cohorts in terms of preferred types of gambling, with preferences toward more modern forms, such as instant-win ticket purchase, slot machines, and internet gambling than the Silent Generation. The Silent Generation was expected to prefer more traditional forms of gambling such as Bingo, card

games, raffles, and lotteries. The frequency of playing different games was measured by one of the problem gambling questionnaires and favourite gambling game was recorded in relation to one of the measures.

## **Method**

### **Participants**

Individuals from the Baby Boom cohort were recruited from the Thunder Bay, Ontario community through the 55+ Centre, the Thunder Bay Country Market, and advertising through local papers and businesses. Participants from Thunder Bay had the option to complete a paper and pencil questionnaire at their convenience and mail them back to the principal investigator. A version of the questionnaire was also made available online for participants from other Ontario communities to access. Individuals from other Ontario communities were recruited through advertising on the Canadian Association of Retired Persons (CARP) website, as well as other online advertising venues.

In addition to individuals from the Baby Boom cohort, data from comparison groups, the Silent Generation and Generation X, were also collected. Therefore, phase one of recruitment focused on the recruitment of individuals from the Generation X, Baby Boom, and Silent Generation cohorts, while phase two focused specifically on cohorts underrepresented in the sample during data collection.

*A priori* analyses using G-Power (2001) indicated that a sample size of 189 individuals was needed to attain a medium effect size using 6 predictors in a multiple regression and with alpha set at  $p = .01$ . Adjusting for non-response and incompleteness, a sample of 252 individuals was sought after, ideally with equal sample sizes in each group; that is 84 individuals from

Generation X, 84 individuals from the Baby Boom cohort, and 84 individuals from the Silent Generation.

Altogether 407 individuals started the questionnaire, 19 of which opted to complete the paper version of the questionnaire. Twelve participants started or completed the questionnaire, but were not within the specified age requirements and were therefore excluded. Fourteen individuals who started the questionnaire online did not answer any questions and were removed from the dataset. A further two individuals were removed due to an infrequency score of 4 or more (see below description of infrequency scale used). Finally, 71 individuals quit the questionnaire before reaching the half-way point and therefore only completed at most demographics and one of the problem gambling measures; these individuals were subsequently removed from further analyses. A chi-square analysis for categorical demographic variables was conducted and no differences were found between the active sample and participants removed from analyses with the exception of income. It was found that participants who were removed were most likely to be in the \$60,000 to \$79,999 income bracket and least likely to be in the \$80,000 to \$99,999 and \$100,000 + income brackets in comparison with the active sample,  $\chi^2(2, N = 360) = 38.01, p < .001$ . Differences were also found between participants removed and the active sample on the continuous variable of Strength of Religious Beliefs. A one-way analysis of variances (ANOVA) indicated that the participants who did not complete the questionnaire had less strong beliefs in their religion ( $M = 2.13, SD = 1.58$ ), than those from the active sample,  $F(1, 335) = 14.30, p < .001$ .

Once individuals were removed there were 308 participants in the working database, including 68 from the Silent Generation (58.2% female), 139 from the Baby Boom cohort (68.1% female), and 101 from Generation X (79% female). A majority of the population was



from Southern Ontario, 63.6%, while 29.8% were from Northern Ontario, and 6.6 % were from outside of Ontario. The sample was predominately Caucasian (91.1%), followed by 3.3% mixed race, and 3.3% Aboriginal/First Nations. Most participants were married or in a common-law relationship (56.9%), while 20.6% were separated or divorced. In terms of religious affiliation, 35.3% of participants identified as Protestant, 26.8% were Catholic, and 29.1% had no religious affiliation. The sample was fairly educated, with 75.4% receiving some level of education after finishing high school. Given the level of education in the sample, 62% of participants had a gross household income of over \$40,000/year. Finally, of participants who chose only one employment category (they could check however many applied, and 16 participants chose more than one category), 33.3% were employed full-time, 37.5% were retired, and 12.2% were employed part-time. Participants who chose more than one category of employment were most likely to be retired and employed part-time (40%).

Significant differences between the cohort groups were found when analyzing categorical demographic data. Specifically, cohorts differed in questionnaire version completed,  $\chi^2 (2, N = 308) = 12.76, p = .002$ , with Generation X least likely to complete the paper version and the Silent Generation most likely to complete the paper version. Participants from each cohort also differed in sex,  $\chi^2 (2, N = 305) = 8.41, p = .015$ , with Generation X being least likely to be male out of the three cohorts and the Silent Generation the most likely to be male. Marital status also differed between groups,  $\chi^2 (6, N = 306) = 46.79, p < .001$ , with Generation X the most likely group to never have been married and the least likely to have been widowed, while the Silent Generation was the most likely to be widowed. In terms of location, while only 6.6% of participants were from outside of Ontario, a significant difference in location was found,  $\chi^2 (4, N = 305) = 28.21, p < .001$ , with Generation X the most likely group to be outside of Ontario and

the Silent Generation the least likely. Household income also varied amongst cohorts, with Generation X the least likely to fall within the \$20,000 to \$39,999 range and the Silent Generation most likely to be in this income range. Three categorical variables violated the expected frequencies assumption for the chi-square test of independence and therefore groups were collapsed and reanalyzed for Race/Ethnicity, Religious Affiliation, and Education (see Table 1 for groupings). Once groups were collapsed, religious affiliation significantly differed amongst cohorts,  $\chi^2(4, N = 306) = 18.21, p = .006$ , with Generation X being the least likely group to be Protestant and most likely to have no religious affiliation.

Secondly continuous demographic variables were analyzed using one-way ANOVAs. It was found that there was a difference in the perception of social support amongst cohort groups,  $F(2, 295) = 7.14, p = .001$ , with Generation X reporting that they receive significantly less support than both the Silent Generation,  $p = .05$ , and the Baby Boomers,  $p = .001$ .

There were no significant differences between cohorts in terms of ethnicity, highest education level, or strength of religious beliefs. Table 1 presents a summary of the demographic characteristics of the sample according to cohort.

## Measures

**Demographics Questionnaire.** A modified version of the demographics questionnaire developed by King (2011) was used in the present study. Information collected included age, sex, marital status, employment status, ethnicity, education, income, housing status, religious affiliation and strength, as well as social activities (see Appendix A). In addition, questions relevant to cell phone ownership/usage and internet usage were added to gauge how the three cohorts use technology and whether they would consider gambling using such technologies.

Table 1

## Demographics by Cohort

	Silent Generation ( <i>n</i> = 68)	Baby Boomers ( <i>n</i> = 139)	Generation X ( <i>n</i> = 101)
Age	<i>M</i> = 73.10 <i>SD</i> = 4.50	<i>M</i> = 58.27 <i>SD</i> = 6.81	<i>M</i> = 44.45 <i>SD</i> = 1.89
	Raw Frequencies (%)		
Sex*			
Female	39 (58.2)	94 (68.1)	79 (79)
Male	28 (41.8)	44 (31.9)	21 (21)
Marital Status**			
Never			
Married	3 (4.4)	11 (8)	22 (21.8)
Married/Common-law	33 (48.5)	82 (59.9)	59 (58.4)
Separated/Divorced	12 (17.6)	32 (23.4)	19 (18.8)
Widowed	20 (29.4)	12 (8.8)	1 (1)
Geographic Location**			
Northern Ontario	24 (35.3)	44 (31.9)	23 (23.2)
Southern Ontario	44 (64.7)	91 (65.9)	59 (59.6)
Other	0 (0)	3 (2.2)	17 (17.2)
Race/Ethnicity			
White (Caucasian)	66 (98.5)	125 (90.6)	87 (87)
Black	0 (0)	1 (0.7)	0 (0)
Asian	1 (1.5)	2 (1.4)	1 (1)
Aboriginal/First Nations	0 (0)	5 (3.6)	5 (5)
Mixed or Other	0 (0)	5 (3.6)	7 (7)
Religion*			
No Affiliation	13 (19.1)	37 (27)	39 (38.6)
Catholic	15 (22.1)	34 (24.8)	33 (32.7)
Protestant	32 (47.1)	55 (40.1)	21 (20.8)
Other	8 (11.7)	11 (5.2)	8 (7.9)

Table 1 (continued)

## Demographics by Cohort

	Silent Generation ( <i>n</i> = 68)	Baby Boomers ( <i>n</i> = 139)	Generation X ( <i>n</i> = 101)
<b>Education</b>			
Some High School or less	7 (10.3)	11 (7.9)	6 (6)
High School Complete	14 (20.6)	24 (17.3)	14 (13.9)
Some College	12 (17.6)	23 (16.5)	18 (17.8)
College Complete to Some Undergrad	21 (30.9)	50 (36)	36 (35.6)
Undergraduate Complete	9 (13.2)	22 (15.8)	18 (17.8)
Postgraduate Complete	5 (7.4)	9 (6.5)	9 (8.9)
<b>Employment <sup>a</sup></b>			
Unemployed*	0 (0)	13 (9.8)	5 (5.5)
Employed Part-Time	5 (7.7)	16 (12.1)	14 (15.4)
Employed Full-Time*	3 (4.6)	43 (32.6)	50 (54.9)
Retired*	56 (86.2)	50 (37.9)	2 (2.2)
Homemaker*	1 (1.5)	3 (2.3)	9 (9.9)
Student	0 (0)	0 (0)	1 (1.1)
Social Assistance/Disability*	0 (0)	7 (5.3)	10 (11)
<b>Combined Income*</b>			
\$0 - \$19,999	5 (7.9)	18 (13.1)	17 (17.5)
\$20,000 - \$39,999	26 (41.3)	36 (26.3)	11 (11.3)
\$40,000 - \$59,999	13 (20.6)	26 (19)	21 (21.6)
\$60,000 - \$79,999	8 (12.7)	21 (15.3)	16 (16.5)
\$80,000 - \$99,999	8 (12.7)	18 (13.1)	13 (33.3)
\$100,000 +	3 (4.8)	18 (13.1)	19 (19.6)
<b>Questionnaire Version*</b>			
Online	59 (86.8)	129 (92.8)	101 (100)
Paper Copy	9 (13.2)	10 (7.2)	0 (0)

\* Differences significant at  $p < .05$ \*\* Differences significant at  $p < .001$ <sup>a</sup> Participants who only selected one employment status

**Gambling Attitudes Scale.** The Gambling Attitudes Scale (GAS) was developed by Kassinove (1998) and is designed to measure attitudes towards gambling in general (GAS-General scale), as well as specific forms of gambling including: casinos (GAS-Casino), betting on horse races (GAS-Horse Races), and playing the lottery (GAS-Lottery). Each scale can also be divided into three equal parts with items reflecting affective, cognitive, and behavioural components of attitudes, based on a tricomponential model. Kassinove (1998) began with a pool of 116 items, which was reduced using expert judges and factor analysis, resulting in 9 items per scale. Outside of the attitudinal scales another two scales were used to measure liberal or conservative thinking (21 items) and thrill-seeking (2 items). In total the GAS questionnaire contains 59 items. Items are responded to using a 6-point Likert-type scale ranging from “Strongly Agree” to “Strongly Disagree.” Scale direction of the GAS was altered for consistency with other measures in the current study.

Internal consistency for the four gambling attitude scales was reportedly high, with Cronbach's  $\alpha$  ranging from .86 to .90; as were the coefficients for the Liberal-Conservative scale, Cronbach's  $\alpha = .84$ , and the Risk-Taking scale, Cronbach's  $\alpha = .94$  (Kassinove, 1998). In terms of test-retest reliability, with a test-retest interval of two weeks, all attitudinal scales had moderate to high reliability ranging from .62 to .85. Furthermore, the liberal-conservative scale had a high test-retest reliability of .94 and the risk-taking scale was moderate to high at .76.

**Gamblers' Beliefs Questionnaire.** Steenbergh et al.'s (2002) Gamblers' Beliefs Questionnaire (GBQ) is a 21-item self-report questionnaire which measures cognitive distortions common to problem gambling. Participants are asked to respond using a 7-point Likert-type scale ranging from “Strongly Agree” to “Strongly Disagree.” For the purpose of the current

research the direction of the scale was reverse-keyed. Namely, Strongly Agree was changed to a 7 rather than 1, and Strongly Disagree was changed from 7 to 1.

Items from the GBQ load on two factors, Luck/Perseverance and Illusion of Control, and can also be totalled for a Total GBQ score. Test-retest reliability was good with  $r = .77$  for the full scale,  $r = .71$  for Luck/Perseverance, and  $r = .77$  for the Illusion of Control scale. The GBQ also showed high levels of internal consistency with a coefficient alpha of .92 for the whole measure, .90 for the Luck/Perseverance factor, and .84 for the Illusion of Control factor.

**Gambling Beliefs and Attitudes Survey.** The Gambling Beliefs and Attitudes Survey (GABS) was developed by Breen and Zuckerman (1999) and is a 35-item questionnaire. The GABS measures a variety of cognitive biases, irrational beliefs, and positively valued attitudes towards gambling. Higher scores on the GABS indicate that gambling is felt to be a positive, exciting experience in which luck and strategy is important. The scale is measured using a 4-point Likert-Type scale ranging from “Strongly Agree” to “Strongly Disagree.” Again, for simplicity and in order for the questionnaires to remain consistent as much as possible, the scale direction was reversed for the current study. Internal consistency for the GABS has been shown to be high with Cronbach's  $\alpha = 0.93$ . Furthermore, GABS scores have also been shown to be significantly correlated with the SOGS.

**Gambling Related Cognitions Scale.** Raylu and Oei (2004) developed the Gambling Related Cognitions Scale (GRCS) in order to screen for gambling-related cognitions in non-clinical samples as a way to identify those at-risk of problem gambling. Participants respond to questions based on a 7-point Likert-type scale format which ranges from “Strongly Disagree” to “Strongly Agree.” This scale includes 23-items which load on five scales including Perceived Inability to Stop Gambling (GRCS InStop), Interpretive Bias (GRCS IntBias), Illusion of Control

(GRCS IllCon), Gambling Expectations (GRCS Exp), and Predictive Control (GRCS Predict).

However, due to high covariation between factors it was also found that all five factors loaded on a single higher-order factor as well. Overall the five-factor model explained a unique variance of 70%. Cronbach's  $\alpha$  for the entire scale was high at .93, while subscales ranged from moderate to high with Cronbach's alphas of .77 to .91. Furthermore, concurrent validity was established through significant correlations of the GRCS with variables known to relate to problem gambling, such as anxiety, depression, stress, and motivation towards gambling. Criterion-related validity, using categorized scores from the South Oaks Gambling Screen (SOGS), showed that the GRCS is able to discriminate between non-problem gamblers and probable problem gamblers. Finally, all subscales with the exception of Predictive Control were able to predict SOGS scores using multiple regression analyses, indicating good predictive validity.

**Gambling Passion Scale.** Rousseau, Vallerand, Ratelle, Mageau, and Provencher (2002) developed the Gambling Passion Scale (GPS). Similar to the idea of positive attitudes toward gambling, gambling passion refers to a strong inclination towards preferred gambling activities. Specifically, two types of passion are measured by the GPS: harmonious and obsessive. Harmonious passion involves an internal force that leads to freely engaging in gambling activity, while obsessive passion involves an internal pressure that “forces” an individual to engage in the activity. Obsessive passion is thought to lead to more negative consequences while harmonious passion involves more positive psychological and physical consequences. The GPS includes 10 items, with 5 items loading on harmonious passion and 5 items loading on obsessive passion. Items are scored on a 7-point Likert-type scale ranging from “Not agree at all” to “Very strongly agree.” Internal consistency was acceptable to high with .90 and .76 for obsessive and harmonious passion, respectively. Exploratory factor analysis showed that the two-factor

solution accounted for 56.30% of the variance. Furthermore, covariance among the two factors was low,  $r = .28$ , suggesting that they are independent. In addition, test-retest reliability, with a 4-week test-retest interval, was high at  $r = .83$  and  $.82$  for obsessive and harmonious passion, respectively. Finally, construct validity was shown through expected correlations with other gambling behavioural measures.

**South Oaks Gambling Screen.** The South Oaks Gambling Screen (SOGS) was initially developed by Lesieur and Blume (1987) as a screening instrument for pathological gambling and was later revised by Lesieur and Blume (1993). The questionnaire consists of 16 items in various response formats, with additional parts to some questions. According to the scoring guideline, individuals are categorized into three groups, no problems, some problems, and probable pathological gambler.

The SOGS is widely used and has been shown to have good validity and reliability (Lesieur & Blume, 1987). Specifically, scores were shown to be highly correlated with counsellors' assessments,  $r = .86$ , highly correlated with *DSM-III-R* pathological gambling diagnoses,  $r = .94$ , and moderately to highly correlated with families' perceptions of pathological gambling,  $r = .60$ . Internal consistency and test-retest reliability have also been shown to be high, with Cronbach's  $\alpha = .97$  and  $r = .71$ , respectively. Finally, Stinchfield (2002) reported good specificity and sensitivity for the SOGS at  $.99$  and  $.91$ , respectively.

**Canadian Problem Gambling Index and the Problem Gambling Severity Index.** In 2001 the Canadian Centre on Substance Abuse introduced the Canadian Problem Gambling Index (CPGI), a self-report questionnaire consisting of 33 questions and consists of four dimensions gambling involvement, problem gambling behaviour, adverse consequences, and problem gambling correlates (Ferris & Wynne, 2001). The problem gambling behaviour and the



adverse consequences factors are scored, while the other two dimensions are not scored but rather are utilized in order to create profiles of different types of gamblers. Furthermore, the Problem Gambling Severity Index (PGSI) is calculated based on 9 of the 33 questions of the CPGI. Severity is further divided into four groups: non-problem gamblers, low risk gamblers, moderate risk gamblers, and problem gamblers. The CPGI has been shown to have good validity and reliability. Specifically, internal consistency yielded a Cronbach's  $\alpha$  of 0.84, test re-test reliability was measured at  $r = 0.78$ , and criterion-related validity resulted in correlation of  $r = 0.83$  between the CPGI and both the *DSM-IV* and the South Oaks Gambling Screen (SOGS). For the purpose of the current study, 2 of the questions from the CPGI that are not included in scoring protocol were removed for the study. This helped to shorten the time to complete the questionnaire, made data analysis more efficient, and eliminated questions that were not pertinent to the hypotheses posed in the current study. Specifically, length of time spent gambling at each activity and largest amount ever wagered on each activity were eliminated (however, frequency of gambling for each activity and amount wagered on average for each activity were retained).

**The Balanced Inventory of Desirable Responding, Version 6 - Form 40A.** The Balanced Inventory of Desirable Responding (BIDR) is a 40-item tool which is responded to using a 7-point Likert-type scale (Paulhus, 1991). The BIDR is designed to measure two factors, Self-Deceptive Enhancement (SDE) and Impression Management (IM), with high scores on each scale associated with exaggerated desirable responding. Internal consistency for the BIDR, typically ranges from Cronbach's alphas of .67 - .77 for the SDE scale and .77-.85 for the IM scale.

**Personality Research Form – Infrequency Scale.** The Infrequency scale from Jackson's (1987) Personality Research Form (PRF), Form E, was administered in order to detect random or careless responding. This scale consists of 8 true or false items in which half were administered in the middle of the questionnaires and half were presented at the very end of the questionnaires. This scale shows acceptable odd-even reliability at  $r = .71$  for a college sample using a Spearman-Brown correction. According to procedures recommended by Jackson (1987) a score of 4 or more rendered the responses as invalid. When individuals were only able to complete half of the infrequency items due to the design of the questionnaire (where half were in the middle and the other half were distributed at the end) scores were prorated by doubling the amount of invalid responses made on the first four questions.

### **Procedure**

There were two forms of data collection: questionnaires completed by paper copy and questionnaires completed online. Both digital and paper versions of the questionnaire required participants to read a cover letter and consent form. Online participants took on average approximately 45 minutes to complete the questionnaire, including a scheduled, optional break halfway through. Participants then had the option to be entered into a draw for one of three \$50 gift cards to their choice of Swiss Chalet, Tim Horton's, or Chapters/Indigo. Following completion of the questionnaire, participants read a debriefing form (see Appendix M) which included links to more information, the option of obtaining a summary of results from the study, and contact information for the Canadian Mental Health Association should anyone like to further discuss their problem gambling behaviours with a professional.

**Data Analyses.** Analyses were conducted on demographic variables, as presented above, in order to determine any areas where the three cohorts differed. Chi-squared analyses were

performed on all non-parametric variables with standardized residuals to determine significant differences between variables with more than two categories. Likewise, one-way ANOVAs were used to determine cohort differences in continuous demographic data.

Specific hypotheses were also tested using one-way ANOVAs for continuous variables and chi-squared for categorical variables. One-way ANOVAs were also used to determine whether cohorts differed on any of the scales measuring gambling attitudes, beliefs, and behaviours. Holm's Sequential Bonferroni adjustment was used to correct for family-wise error in multiple comparisons. Variables which violated Levene's Test of Equality of Error Variances were further subject to a higher alpha level with  $p$  set at .025 according to recommendations by Tabachnick and Fidell (2007).

Although for historical descriptive purposes Galarneau (1994) separated Baby Boomers into two waves, Baby Boomers were treated and analyzed as a single cohort within the current study. This is congruent with findings by Chhabra (2008) that early and late Baby Boomers do not show differences in gambling participation and perceptions. Specifically, while they did show demographic differences (e.g., differences in marital status, number of children, and income), they did not differ in participation in casino gambling or in regards to the impact of casinos on the community; therefore further analyses by Chhabra (2008) treated the Baby Boom cohort as a single group rather than two.

Hypothesis 1 was evaluated using general scores on the GAS in order to evaluate overall positive or negative views towards gambling. Hypothesis 2a, in regards to selective memory distortions, was analyzed using two questions from the CPGI, namely "Do you remember a big win when you first started gambling?" and "Do you remember a big loss when you first started gambling?" In addition, Hypothesis 2b regarding consequences to gambling was tested using

questions from the SOGS and the CPGI. Luck and rituals, in relation to Hypothesis 2c, were evaluated using the Luck/Perseverance scale from the GBQ and the Illusion of Control scale from the GRCS. Hypothesis 3 in regards to financial risk-taking was measured using chasing behaviour questions on both the SOGS and CPGI, as well as specific questions on the GABS and the GBQ. Wagering larger amounts as a form of financial risk-taking was measured using specific wagers on different gambling activities; this was then compared to gross household income, as measured by the demographics questionnaire, in order to evaluate “risk.” A new variable was created by taking the midpoint of each income group as an approximate yearly income and comparing total yearly gambling wagers in order to derive a percentage of income spent yearly on gambling. Finally, Hypothesis 4 was measured using the CPGI for the frequency of playing modern versus traditional forms of gambling, as well as the Gambling Passion Scale for favourite gambling activity.

In addition to one-way ANOVAs, seven hierarchical multiple regressions were used to measure level of problem gambling behaviour in relation to attitudes and beliefs across cohorts in general. Sex, questionnaire version, and geographical location were entered at the first step of each multiple regression in order to control for group differences found between cohorts. While other variables differed significantly between groups, such as religion, marital status, and household income, such variables would be expected to differ across cohort and/or age and therefore variability in the data would be affected by controlling for such differences. The categorical predictor variable of cohort was contrast dummy-coded so that the first dummy-code compared Baby Boomers to the Silent Generation and the second compared Baby Boomers to Generation X. All other predictor variables, including gambling attitudes and gambling belief scales, were continuous and therefore were centered using their respective means. The third step

of each multiple regression contained the interaction variables between cohort dummy-codes and centered continuous predictors. Since two measures were used to evaluate problem gambling, namely the CPGI and the SOGS, scores on each measure were standardized into  $z$ -scores and the mean of the two scores was used as the dependent variable for each multiple regression.

Multiple regression analyses were tested for multicollinearity using tolerance values and the VIF statistic.

Logistic regressions were further used to examine whether predictor variables could differentiate between probable problem gambling and non-problem gambling and whether these differed between cohorts. Recommended cut-off scores on both the CPGI and the SOGS were used to determine probable problem gambling. If an individual scored at or above the recommended cut-off for either of the problem gambling measures they were coded as a probable problem gambler, whereas those who scored below cut-off on each measure were coded as probable non-problem gamblers. Continuous predictors were centered beforehand and categorical predictors were dummy-coded by SPSS. Separate logistic regressions were performed for each scale in order to control for correlation between scales from the same measure.

## Results

### Gambling Attitudes

A one-way ANOVA showed that Generation X had significantly more positive attitudes ( $M = 37.07$ ,  $SD = .84$ ) toward lotteries than the Silent Generation ( $M = 32.53$ ,  $SD = 1.20$ ) on the GAS,  $F(2, 268) = 5.65$ ,  $p = .004$ , partially supporting Hypothesis 1. No significant differences were found between any of the cohorts in terms of attitudes towards gambling in general,

casinos, or horse races. Hypothesis 1 was therefore not supported in terms of Baby Boomers differing from either of their surrounding cohorts in their attitudes towards gambling.

In addition, neither hierarchical multiple regression nor logistic regression showed significant differences between Baby Boomers and surrounding cohorts in gambling attitudes and problem gambling.

### **Gambling Preferences**

It was expected that Baby Boomers would differ from other cohorts in terms of preferred types of gambling, with preferences towards more modern forms of gambling than the Silent Generation. In analyzing favourite gambling game no significant differences were found between cohorts. However, in analyzing frequency of playing different types of gambling games in the last 12 months, it was found that Generation X played on video lottery terminals ( $M = .54$ ,  $SD = 1.36$ ) and played roulette at a casino ( $M = .36$ ,  $SD = 1.03$ ) more often than the Silent Generation ( $M = .20$ ,  $SD = .50$ ;  $M = .20$ ,  $SD = .50$ , respectively),  $F(2, 295) = 3.54$ ,  $p = .03$  and  $F(2, 153) = 3.47$ ,  $p = .034$ . Generation X ( $M = .58$ ,  $SD = 1.35$ ) also played blackjack at a casino more often than both Baby Boomers ( $M = .20$ ,  $SD = .50$ ) and the Silent Generation ( $M = .06$ ,  $SD = .23$ ),  $F(2, 154) = 4.87$ ,  $p = .009$ . Therefore, Hypothesis 4, which proposed that Baby Boomers would show a preference to more modern forms of gambling compared with the Silent Generation, was not supported.

### **Gambling Beliefs**

It was expected that Baby Boomers would report smaller wins, would not report gambling as a way to make money, and would be more likely remember a big loss than the Silent Generation. While independent samples  $t$ -tests did not support these hypotheses, it is of note that

individuals from the Silent Generation were less likely to remember a big loss from gambling than Baby Boomers and the difference approached significance at  $p = .063$ .

One-way ANOVAs were used to determine whether any of the cohorts significantly differed on any of the gambling belief or problem gambling measures. There were no significant differences found between the three cohorts in terms of means on the gambling belief scales, the problem gambling measures, or the aggregate of the problem gambling measures. See Table 2 for descriptive statistics between cohorts on each measure.

Although differences in gambling beliefs was largely exploratory, given the limited amount of research into cohorts and gambling, a specific hypothesis, Hypothesis 2c, regarding luck distortions was made based on findings of religiosity and gambling. It was expected that Baby Boomers would have fewer cognitive distortions in regards to luck and rituals than the Silent Generation, but more luck distortions than Generation X. While it was not found that cohorts differed in terms of the level of luck-related distortions, it was found that there were interactions within multiple regression and logistic regression analyses between scales measuring control and luck between cohorts, as described below.

Hierarchical multiple regressions using the GBQ total score indicated that Baby Boomers' cognitive distortions were more associated with problem gambling behaviours than the Silent Generation and less than Generation X,  $F(8, 276) = 25.98, p < .001$ . The Luck scale on the GBQ further clarified differences between cohorts, with Baby Boomers' illusions of luck more associated with problem gambling than the Silent Generation's, but less than Generation X's,  $F(11, 276) = 19.55, p < .001$ . See Table 3 and Table 4 for further multiple regression results. In addition, a logistic regression was able to correctly identify probable problem gamblers from non-problem gamblers based on higher GBQ total scores,  $\chi^2(5, N = 280) = 73.65$ ,

$p < .001$ , especially for individuals in Generation X, with an odds ratio of 1.05,  $p = .03$ , compared with Baby Boomers. Higher scores on the GBQ Luck scale specifically were able to better differentiate problem gamblers from non-problem gamblers in Generation X compared with Baby Boomers ( $p = .025$ ) with an odds ratio of 1.09,  $\chi^2(8, N = 280) = 81.00, p < .001$ . The GBQ Illusion of Control scale separated problem gamblers from non-problem gamblers in Generation X versus the Baby Boomers ( $p = .019$ ),  $\chi^2(5, N = 281) = 55.79, p < .001$ , with an odds ratio of 1.10.

The GABS was designed to measure beliefs commonly held by regular gamblers in addition to positive attitudes towards gambling and results in a single total score. It was found that GABS scores were more associated with problem gambling in Generation X than in Baby Boomers and that Baby Boomers' GABS scores were significantly more related to problem gambling than the Silent Generation. See Table 5 for further multiple regression results. In addition, GABS scores significantly identified problem gamblers from non-problem gamblers in a logistic regression ( $p < .001$ ), however no significant differences were found between cohorts,  $\chi^2(5, N = 277) = 82.34, p < .001$ .

Analogous to results found using the GABS and the GBQ, the GRCS, which was designed to measure not only cognitive distortions but also beliefs about self in relation to gambling, showed significant differences between cohorts and problem gambling. The GRCS Total indicated that Baby Boomers' scores were more associated with problem gambling than the Silent Generation's scores and less than Generation X. A second regression analyzing specific scales on the GRCS further indicated that Illusions of Control were less associated with problem gambling in the Silent Generation compared with Baby Boomers. Furthermore,



Gambling-Related Expectations were less associated with problem gambling in Baby Boomers compared with Generation X. See Table 6 and Table 7 for further multiple regression results. Furthermore a logistic regression showed that GRCS Total scores better classified problem gamblers in Generation X compared with Baby Boomers ( $p = .033$ ),  $\chi^2(5, N = 274) = 101.17, p < .001$ , odds ratio = 1.09. A second logistic regression showed that GRCS Illusion of Control was better able to distinguish between problem and non-problem gamblers in Generation X compared to the Baby Boom cohort ( $p = .004$ ),  $\chi^2(5, N = 274) = 69.72, p < .001$ , odds ratio = 1.53. Furthermore, logistic regressions also pointed to higher scores on GRCS Predictive Control ( $p = .048$ , odds ratio = 1.13) and Interpretive Control Bias ( $p = .027$ , odds ratio = 1.27) scales being more associated with problem gamblers in Generation X compared to the Baby Boom cohort,  $\chi^2(5, N = 274) = 55.26, p < .001$  and  $\chi^2(5, N = 274) = 79.31, p < .001$ , respectively. Finally, higher scores on the GRCS Inability to Stop Gambling scale were more associated with problem gamblers from the Baby Boom cohort than the Silent Generation ( $p = .03$ ),  $\chi^2(5, N = 274) = 117.68, p < .001$ , with an odds ratio of 0.82.

### **Gambling Consequences**

Chi-square analyses indicated that Generation Xers were more likely to report negative consequences of gambling than either cohort. More specifically, in terms of interpersonal relationships, Generation X was more likely to argue about money in relation to their gambling,  $\chi^2(2, N = 297) = 7.87, p = .02$ . Individuals from the Generation X cohort were also more likely to have borrowed money from someone for gambling and not paid them back,  $\chi^2(2, N = 297) = 11.93, p = .003$ . They were the most likely cohort to have felt guilty about their gambling,  $\chi^2(2, N = 295) = 7.62, p = .022$ , and were more likely to have missed time from school or work as a result of their gambling,  $\chi^2(2, N = 296) = 13.99, p = .001$ . Therefore Hypothesis 2b, that Baby

Boomers and Generation X would report more consequences to gambling than the Silent Generation, was partially supported.

Hypothesis 3, that Baby Boomers would engage in more financial risk than other cohorts in gambling, was also not supported. Comparing income with average yearly money spent on gambling activities did not yield significant differences between cohorts. Generation X did significantly endorse more chasing-type behaviour than the Silent Generation, specifically scoring higher on the item “If I lose, it is important to stick with it until I get even.” Furthermore Generation X ( $M = 6.36, SD = 2.81$ ) scored higher on the Risk-Taking scale from the GAS than did either of the other two cohorts (Baby Boomers  $M = 5.37, SD = 2.53$ ; Silent Generation  $M = 5.22, SD = 2.75$ ),  $F(2, 263) = 4.49, p = .012$ .

### **Gambling Passion**

A multiple regression did not show cohort differences between GPS Obsessive and Harmonious scores associated with levels of problem gambling; although Obsessive passion was associated with higher problem gambling overall,  $p < .001$ . However, logistic regression showed that when classifying problem gamblers from non-problem gamblers, GPS Obsessive scores better distinguished Baby Boomers than they did for those from the Silent Generation ( $p = .023$ ),  $\chi^2(8, N = 265) = 88.63, p < .001$ . In contrast, low GPS Harmonious scores better distinguished Baby Boomers as problem gamblers than those from the Silent Generation ( $p = .016$ ).

Table 2

*Cohort Means on Gambling and Other Measures*

Measure Scale (range possible)	Silent Generation	Baby Boomers	Generation X
	Mean ( <i>SD</i> )		
<b>BIDR</b>			
Self-Deception Enhancement (0-20)	5.19 (3.50)	5.91 (3.84)	5.01 (3.38)
Impression Management (0-20)	6.40 (3.66)	6.34 (3.70)	4.90 (3.12)
CPGI (0-27)	1.98 (4.09)	1.91 (3.77)	3.29 (6.25)
SOGS (0-20)	1.91 (2.65)	1.90 (3.25)	3.16 (4.68)
<b>GBQ</b>			
Luck (13-91)	25.71 (14.49)	23.43 (14.09)	25.56 (18.41)
Illusion of Control (8-56)	19.21 (10.29)	17.35 (9.65)	18.93 (11.58)
Total (21-147)	44.92 (23.39)	40.77 (22.35)	44.48 (29.09)
GABS (35-140)	66.46 (17.78)	64.54 (17.54)	69.14 (21.80)
<b>GRCS</b>			
Inability to Stop (5-35)	8.53 (5.96)	7.61 (4.84)	8.21 (6.69)
Interpretive Bias (4-28)	8.25 (5.10)	7.22 (4.79)	7.89 (6.31)
Illusion of Control (4-28)	6.14 (3.74)	6.22 (4.07)	6.45 (5.15)
Gambling Expectations (4-28)	9.04 (5.12)	8.75 (5.47)	9.22 (6.45)
Predictive Control (6-42)	11.91 (7.31)	10.32 (5.96)	12.30 (8.85)
Total (23-161)	43.87 (23.73)	39.57 (21.86)	44.26 (30.23)
<b>GAS</b>			
Casino	34.61 (8.96)	32.95 (9.57)	34.18 (10.14)
Horse	23.55 (8.86)	22.31 (8.24)	24.08 (10.66)
Lottery	32.94 (8.43)	35.05 (7.96)	37.30 (7.92)
General	28.12 (9.22)	27.32 (9.68)	30.09 (11.00)
Liberal/Conservative	84.27 (15.88)	84.41 (13.71)	85.80 (13.73)
Risk Taking	5.31 (2.78)	5.37 (2.55)	6.44 (2.77)
<b>GPS</b>			
Obsessive	7.48 (5.08)	6.89 (4.98)	8.63 (8.07)
Harmonious	9.80 (5.92)	8.75 (6.05)	10.49 (7.65)

Table 3.

*Multiple Regression of GBQ Score and Cohort Associated with Problem Gambling*

Dependent: Problem Gambling Aggregate		<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Model 1 (covariates)	Constant	.295	.431		0.008
	Version	-.320	.255	-.080	
	Sex	-.019	.126	-.009	
	Location	.044	.110	.025	
Model 2 (variables)	Constant	.165	.354		0.369*
	CohortD1	.076	.077	.062	
	CohortD2	-.134	.070	-.122	
	GBQ	.023	.002	.595*	
Model 3 (product terms)	Constant	-.086	.330		0.437*
	CohortD1 X GBQ	.011	.003	.204*	
	CohortD2 X GBQ	-.014	.002	-.325*	

\*significance  $p \leq .001$ 

Table 4.

*Multiple Regression of GBQ subscales and Cohort Associated with Problem Gambling*

Dependent: Problem Gambling Aggregate		<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Model 1 (covariates)	Constant	.295	.431		0.000
	Version	-.320	.255	-.080	
	Sex	-.019	.126	-.009	
	Location	.044	.110	.025	
Model 2 (variables)	Constant	.116	.354		0.379**
	CohortD1	.075	.076	.061	
	CohortD2	-.136	.070	-.124	
	GBQ Luck	.033	.004	.543**	
Model 3 (product terms)	Constant	.006	.008	.068	0.448**
	CohortD1 X GBQ Luck	.021	.008	.255*	
	CohortD1 X GBQ Control	-.006	.012	-.050	
	CohortD2 X GBQ Luck	-.020	.007	-.297*	
	CohortD2 X GBQ Control	-.004	.011	-.037	

\*significance  $p < .015$

Table 5.

*Multiple Regression of GABS Score and Cohort Associated with Problem Gambling*

Dependent: Problem Gambling Aggregate		<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Model 1 (covariates)	Constant	.295	.433		0.008
	Version	-.320	.256	-.080	
	Sex	-.019	.127	-.009	
	Location	.044	.111		
Model 2 (variables)	Constant	.165	.354		0.593**
	CohortD1	.059	.078	.049	
	CohortD2	-.104	.072	-.095	
	GABS	.029	.003	.576**	
Model 3 (product terms)	Constant	.069	.346		0.623**
	CohortD1 X GABS	.010	.004	.145*	
	CohortD2 X GABS	-.013	.003	-.238**	

\*significance  $p < .04$ \*\*significance  $p < .001$ 

Table 6.

*Multiple Regression of GRCS Total score and Cohort Associated with Problem Gambling*

Dependent: Problem Gambling Aggregate		<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Model 1 (covariates)	Constant	.295	.435		0.008
	Version	-.320	.257	-.080	
	Sex	-.019	.127	-.009	
	Location	.044	.112	.025	
Model 2 (variables)	Constant	.318	.318		0.481**
	CohortD1	.104	.070	.086	
	CohortD2	-.137	.065	-.125*	
	GRCS Total	.026	.002	.678**	
Model 3 (product terms)	Constant	.262	.308		0.519**
	CohortD1 X GRCS Total	.009	.003	.166**	
	CohortD2 X GRCS Total	-.010	.002	-.234**	

\*significance  $p < .05$ \*\*significance  $p < .003$

Table 7.

*Multiple Regression of GRCS Subscales and Cohort Associated with Problem Gambling*

Dependent: Problem Gambling Aggregate		<i>B</i>	<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>
Model 1 (covariates)	Constant	.295	.435		.008
	Version	-.320	.257	-.080	
	Sex	-.019	.127	-.009	
	Location	.044	.112	.025	
Model 2 (variables)	Constant	.398	.272		.618**
	CohortD1	.143	.060	.118*	
	CohortD2	-.178	.055	-.162**	
	GRCS InStop	.106	.010	.623**	
	GRCS IntBias	.019	.016	.106	
	GRCS Illusion Control	-.024	.015	-.108	
	GRCS Expectations	.049	.011	.291**	
	GRCS Predictive Control	-.016	.010	-.118	
Model 3 (product terms)	Constant	.322	.261		.661**
	CohortD1 X GRCS InStop	.009	.016	.038	
	CohortD1 X GRCS IntBias	.016	.023	.666	
	CohortD1 X GRCS IllCon	.057	.026	.189*	
	CohortD1 X GRCS Exp	.024	.023	.108	
	CohortD1 X GRCS Predict	-.028	.017	-.151	
	CohortD2 X GRCS InStop	-.016	.015	-.083	
	CohortD2 X GRCS IntBias	.002	.022	.010	
	CohortD2 X GRCS IllCon	-.012	.021	-.049	
	CohortD2 X GRCS Exp	-.037	.016	-.196*	
CohortD2 X GRCS Predict	.003	.014	.021		

\*significance  $p < .05$ \*\* significance  $p < .001$

## **Discussion**

The purpose of the current study was to investigate differences between Baby Boomers and their surrounding cohorts, namely Generation X and the Silent Generation, in terms of gambling attitudes and beliefs related to problem gambling behaviour. There has been limited research looking at problem gambling and Baby Boomers specifically; however some specific hypotheses were made in considering studies that have examined age and cohort differences in problem gambling, as well as cohort studies within other areas of research. In particular, hypotheses were made in relation to gambling attitudes, gambling beliefs about luck and illusions of control, gambling consequences, and gambling preferences. Furthermore an exploratory measure of gambling passion was also included in the current study.

### **Gambling Attitudes**

Baby Boomers have experienced gambling as a socially acceptable, and legal, past-time for a longer duration than the Silent Generation (CAMH, 2012); therefore they were expected to hold more positive attitudes toward gambling. This was investigated since the pathways model suggests that an acceptability of gambling is necessary to develop problem gambling (Blaszczynski & Nower, 2002). Despite the expectation that Baby Boomers would hold more positive views towards gambling than the Silent Generation, no differences were found between Baby Boomers and either surrounding cohort. While Generation X did hold more positive views towards lotteries than the Silent Generation, there were no other differences found between cohorts in terms of attitudes towards lotteries, casinos, horse racing, or general attitudes, either in one-way ANOVAs or regression analyses. It could be that gambling has been legalized and deemed as a socially acceptable behaviour for such a long period of time that any attitudinal differences between cohorts have decreased or ceased over time. This is concurrent with results

by Wiebe, et al., (2004) who found that, in a survey of older adults aged 60 and over, 73.5% of participants had gambled in the past year. This finding suggests that a majority of older adults held views that gambling was at least somewhat acceptable given their own participation.

Another possible explanation of the current findings is that older cohorts and/or older individuals from the Silent Generation may have had more negative views towards gambling but were not represented in the current study. While efforts were made to attain a wide range of individuals from the Silent Generation the mean age ( $M= 73.10$ ) was approximately 5 years younger than the median (Median = 78) of the Silent Generation age range (ages 68- 88).

Nonetheless, this finding may be of some concern since it seems that views toward gambling are equivalent across age groups and could possibly indicate a trend towards increased problem gambling. This is notable, especially when one considers that older adults (currently comprised of the Silent Generation and Baby Boomers if older adult is taken to mean aged 65+) are a more vulnerable population since they are more likely to live on a fixed income, making it difficult to earn back lost income (Lemay et al., 2006).

### **Gambling Preference**

It was expected that Baby Boomers would prefer more modern forms of gambling than the Silent Generation. However, the current study did not find differences between Baby Boomers and the Silent Generation in terms of favourite gambling game or gambling game frequencies. As might be expected, Generation X played on video lottery terminals more often than the Silent Generation. However, unexpectedly, Generation X also played roulette at casinos more often than the Silent Generation and black jack at casinos more often than both the Silent Generation and Baby Boomers.



### **Gambling Beliefs**

Gambling beliefs, in addition to attitudes, were measured within the current study. There are many cognitive distortions that both recreational and problem gamblers can fall prey to. One such distortion involves a selective memory when it comes to gambling wins and losses, more specifically the underestimation of losses and the overestimation of wins (Toneatto, 1999). Desai et al. (2004) found that a sample of older adults were more likely to report larger wins and gambling as a way to make money as compared to a sample of younger adults. Given these findings, we expected to find differences between the Silent Generation and younger cohorts in terms of selective memory distortions (Hypothesis 2a). Despite our hypothesis there were no significant differences found between any of the cohorts. While not quite reaching significance, there was a difference between individuals from the Silent Generation not recalling a big loss when they first started gambling versus the Baby Boomers. It could be that given a larger sample from the Silent Generation such a difference might reach significance in future research. However, at the present time this study does not support findings by Desai et al. (2004) that older adults are subject to more selective memory distortions. In addition to the possibility that a small sample size contributed to these results, it is also possible that differences are due in part to the fact that Desai et al. (2004) did not distinguish between cohorts, but rather studied individuals who were in two age groups, those who were 65 + and those who were aged 18-64. While the 65+ category likely consisted of mostly the Silent Generation, there is the possibility that their preceding cohort was included in the sample as well. Furthermore individuals who were under age 65 could have spanned across numerous cohorts.

A second gambling belief that was expected to differ between cohorts was in regards to luck and rituals. Adams (2010) had found that the Silent Generation were more religious than

the Baby Boom cohort. Similar to religious beliefs, beliefs about luck and illusions of control require one to reject beliefs about random outcomes and free will, at least to some degree. In the current study religious affiliation was found to differ amongst cohorts; while strength of religious beliefs did not differ between cohorts, it is of note that individuals who reported no religious affiliation had the option to choose not applicable for strength of religious beliefs. Despite Hypothesis 2c, cohorts were not found to differ on scales measuring beliefs about luck or illusions of control. However, interestingly, while cohorts may not have differed in their levels of luck distortions and illusions of control, they were found to differ in how such distortions were associated with their problem gambling behaviours.

There were also no differences between cohorts and mean scores on other gambling belief scales nor were there differences in the levels of problem gambling on the CPGI, the SOGS, or the aggregate problem gambling score. This suggests that any cohort differences described within hierarchical multiple regressions speak to differences in the strength of the relationship between gambling belief scales and problem gambling measures. Cohort therefore can be seen to moderate the association of certain gambling beliefs and problem gambling behaviour.

The GBQ measure of Luck/Perseverance and the GRCS measure of Illusions of Control were associated with higher levels of problem gambling in Baby Boomers than the Silent Generation within multiple regression analyses. In addition to multiple regression analyses, a logistic regression showed that the Perceived Inability to Stop Gambling on the GRCS was more related to problem gamblers in Baby Boomers versus the Silent Generation. Together, such findings could be indicative of a difference in the development of problem gambling itself. For example, from a pathways model perspective, perhaps Baby Boomers are more likely to be

classified as behaviourally-conditioned problem gamblers than the Silent Generation. The behaviourally-conditioned pathway to problem gambling develops through the effects of conditioning and distorted cognitions regarding the probability of winning. Decision-making in this group is affected by cognitive schemas that form versus impaired control. In contrast, it could be that the Silent Generation is more prone to developing problem gambling through an emotionally vulnerable pathway. Those who are emotionally vulnerable problem gamblers seek to regulate affective and psychological states or needs (Blaszczynski & Nower, 2002). Such an interpretation would be consistent with Alberghetti and Collins (2013) who note the social benefits of gambling for those in the Silent Generation.

In addition to differences found between Baby Boomers and the Silent Generation, cohort differences were also found in comparisons with Generation X. Specifically, GBQ Total scores, GBQ Luck, and GBQ Illusions of Control variables were more strongly associated with probable problem gamblers than non-problem gamblers in Generation X as compared to the Baby Boom population. This finding was consistent with multiple regression analyses which suggested that higher GBQ Total scores and GBQ Luck scores were associated with higher levels of problem gambling in Generation X versus the Baby Boom cohort. Furthermore, GRCS scales including: Total, Illusion of Control, Predictive Control, and Interpretive Bias Control were all able to better distinguish Generation X problem-gamblers versus Baby Boom problem gamblers within logistic regressions. A hierarchical multiple regression further indicated that GRCS Gambling Expectancies was related to higher levels of problem gambling in Generation X than Baby Boomers.

While the main focus of the current study was to determine differences between Baby Boomers and the Silent Generation, Generation X was included in order to further differentiate

between cohorts. Upon a review of the literature, gambling studies have to our knowledge never examined differences between Baby Boomers and Generation X. From a pathways perspective problem gambling development and maintenance of problem gambling may differ between cohorts. The current results suggest that there may be more behaviourally conditioned problem gamblers in Generation X than in the Baby Boom cohort (Blaszczynski & Nower, 2002). It is possible that differences in values between cohorts influence the development of problem gambling. For example, Bickel and Brown (2005) reported that Generation X is less likely to put their job above their interests and less likely to delay gratification. However, how specific values may relate to gambling beliefs is unclear and in need of future research.

Differences between cohorts and gambling beliefs as they relate to problem gambling may have implications in treatment planning and prevention of problem gambling. For example, given further research into this area, it is possible that challenging specific distortions relevant to different cohorts could be an effective treatment strategy. Cognitive Behavioural Therapy (CBT) is well-suited to addressing such distortions since it focuses on changing maladaptive thinking that reinforces the problem behaviour. Furthermore, the results of the current study could help inform preventative strategies through targeting cognitive distortions associated with problem gambling.

In addition to cohort differences, some measures were found to be associated with problem gambling behaviour universally. GABS scores, GRCS Total scores, and GBQ Total scores were associated with problem gambling behaviours across cohorts; this finding is consistent with each of the respective studies presenting the creation of each scale and their relation to problem gambling (Breen & Zuckerman, 1999; Kassinove, 1998; Raylu & Oei, 2004).

### **Gambling Consequences**

It was hypothesized that Baby Boomers would show greater risk-taking behaviour in gambling than either cohort. Jianakoplos and Bernasek (2006) had found that financial risk-taking was higher in the Baby Boom cohort than Generation X; therefore it was expected that this finding might translate to Baby Boomers taking higher risks in gambling than surrounding cohorts. The current study did not support Hypothesis 3; instead we found that Generation X significantly endorsed an item measuring chasing-type behaviour more than the Silent Generation. Generation X also scored higher on the Risk-Taking scale of the GAS. Together these results suggest an age effect rather than a cohort effect, with younger individuals engaging in more risk, decreasing with age. While Baby Boomers demonstrated financial risk-taking in the Jianakoplos and Bernasek (2006) study, the cohort effect did not carry over to risk-taking behaviour in gambling. One explanation of the current findings could be due to differences in defining cohort age ranges; Jianakoplos and Bernasek (2006) used the age range of 1945 to 1964 to describe Baby Boomers (the current study used the age range of 1946-1965) and 1965 to 1983 to define Generation X (1966-1971 in the current study). Furthermore, Jianakoplos and Bernasek (2006) measured financial risk-taking by the head of the household, not on an individual basis, possibly presenting a selection bias by their own account. It is also possible that the current study did not support this finding given results by Adams (2010) who found that Baby Boomers actually can be distinguished by four separate categories. One of the groups outlined by Adams (2010) are the Connected Enthusiasts; these individuals are described as being more sociable, experience-seeking and risk-taking, as well as being large consumerists. Neither the Jianakoplos and Bernasek (2006) study nor the current study examined results within the Baby Boom cohort, mainly since such a measure is not available. Perhaps if analyses distinguished these Connected

Enthusiasts from other subgroups of Baby Boomers there would be effects on financial risk-taking in gambling. Considering that Connected Enthusiasts represent over 2 million Canadians versus over 4 million individuals in the entire Silent Generation, it would be useful to investigate whether they engage in greater risk-taking when gambling, both compared to within their cohort and compared to other cohorts (Adams, 2010). Future research could focus on developing a questionnaire that is accessible to researchers and can distinguish between the four groups of Baby Boomers described by Adams (2010).

In addition, Hypothesis 2b, posited that the Silent Generation would report the least amount of consequences from gambling than either of the other cohorts. Desai et al. (2004) had found that older adults compared with younger and middle-aged adults engaged in more frequent gambling, higher alcohol use, and had higher rates of depression, yet reported fewer consequences to health and well-being. The current study looked specifically at the consequences of gambling to see if findings would translate from general health and well-being. This hypothesis was partially supported since Generation X reported the most consequences of gambling of the three cohorts, however no differences were found amongst Baby Boomers or the Silent Generation. Specifically, Generation X was the most likely cohort to argue about money in relation to gambling, they were most likely to have borrowed money to gamble and not paid it back, they were most likely to report feeling guilty about their gambling behaviours, and they were more likely to have missed school or work because of their gambling. Alberghetti and Collins (2013) hypothesized that the Silent Generation may be more unwilling to seek help for problem gambling and that gambling consequences may be more severe; this is in line with the theory that the Silent Generation may harbour cognitive distortions about how their gambling affects them. The current study partially supports this theory; however Baby Boomers also did

not report as many consequences as Generation X. It is possible that both cohorts, the Baby Boomers and the Silent Generation, report fewer consequences to their gambling behaviours, possibly representing some level of cognitive dissonance in both cohorts.

### **Gambling Passion**

The GPS was included in this study as an exploratory, supplementary measure; therefore no predictions were made about cohort differences. While a multiple regression did not show cohort differences in terms of GPS scores and level of problem gambling behaviour, logistic regression showed that both Harmonious and Obsessive scales could better classify problem gambling Baby Boomers than Silent Generation ones. More specifically, both high scores on the GPS Obsessive Passion scale and low scores on GPS Harmonious Passion scale were associated with problem gamblers from the Baby Boom cohort compared to the Silent Generation. This finding supports Alberghetti and Collins (2013) who expected that Baby Boomers would be more likely to exhibit obsessive passion for gambling and be at a greater risk of problem gambling than the Silent Generation. This expectation was based on findings that Baby Boomers are less cautious and are more adventurous pursuers of personal gratification than their preceding cohort. They also posited that the Silent Generation would be more likely to exhibit harmonious passion and be less likely to be problem gamblers than the Baby Boomers, both due to generational traits and age effects. Specifically, the Silent Generation, who are older adults, may benefit more from recreational gambling given their life stage; representing an age effect. This is due to the fact that the Silent Generation is more likely to be experiencing decreasing social networks as a result of retirement and bereavement and may take on a more harmonious passion for gambling due to the social benefits they receive. Our findings support this hypothesis, showing that lower harmonious scores for Baby Boomers classify problem gambling Baby

Boomers, while higher harmonious scores are associated with non-problem gambling individuals from the Silent Generation.

### **Limitations**

While efforts were made to obtain equal sample sizes, the current study had many more Baby Boomers than either of the other cohorts measured. The most difficult group to recruit was the Silent Generation since many completed paper questionnaires and had limited access to the Internet. Once recruitment was finished and participants were removed from the study, for the various reasons outlined in the Participant section of the Methods, there were 68 people from the Silent Generation as opposed to the 84 we sought to attain.

Furthermore, the current sample represents a convenience sample. There was a higher proportion of females, as well as a higher proportion of Caucasian individuals, in all three cohorts than are found in the Canadian population and consequently results may not generalize to the population (Statistics Canada, 2012).

In addition, this was a cross-sectional study and therefore it cannot be differentiated whether certain effects can be attributed to cohort or to age. Interpretation based in theory can help with this distinction, however without longitudinal results these interpretations are not conclusive. Furthermore, due to the cross-sectional nature of the study inferences as to causal relationships cannot be made. While regression is often used in prediction, without a longitudinal study it is unknown as to which variable occurred first, for example, whether illusions of control came prior to problem gambling or vice versa.

Finally, the current study used self-report measures which may be subject to measurement bias; specifically, the tendency for people to give responses based on social desirability. However, this was measured with the BIDR impression management scale and



results were below cut-off criteria for an invalid protocol. Furthermore, the online version of the questionnaire may have reduced the level of bias since the study was anonymous and presumably completed in privacy.

### **Future Directions**

In addition to future research described throughout the discussion section some other recommendations can be made given the results of the current study. For example, future research could attempt to measure gambling attitudes and beliefs longitudinally in order to differentiate more definitively between age and cohort effects. Longitudinal research would also allow for the inference of causal relationships. This would be especially interesting in relation to cognitive distortions about gambling, as it is likely that distortions occur prior to the development of problem gambling, especially since recreational gamblers are also known to fall prey to distortions about gambling.

In addition, it would be useful to monitor problem gambling behaviours and beliefs in the Baby Boom cohort as they continue to retire. This will help inform up-to-date prevention and intervention for problematic gambling. Along the same lines, research should be undertaken in order to determine if CBT aimed at reducing cognitive distortions associated with problem gambling can reduce or eliminate problem gambling behaviour. Such a study should further determine if cohort directed treatment, based on findings from the current study, is more effective than a more general approach to challenging cognitive distortions.

Furthermore, in considering some of the studies discussed in the Introduction section of this paper, a 3-way interaction between sex, cognitive distortions, and preferred gambling activity would be provide for an interesting analysis; however this was beyond the scope of the current paper. Future analyses as well as future studies could look at sex interactions in

cognitive distortions by preferred gambling activity in order to examine any differences associated with problem gambling. Another study that could prove fruitful would be to track alternate leisure activities of individuals as they head into retirement to see if certain activities or the amount of other leisure activities one has may act as a protective factor to problem gambling. The current study did examine some leisure activities and therefore future analyses with the current data set could explore leisure activities to see whether they may negatively correlate with problem gambling and whether these differ between cohorts.

Finally, given the current study's findings that gambling attitudes largely did not differ between cohorts, future research should be aimed at determining whether results generalize to the Ontario and Canadian population. This could have implications in terms of prevalence of problem gambling in the Silent Generation.

### **Conclusion**

As Baby Boomers continue into retirement it is becoming more important for research to focus on how they might differ from previous cohorts of older adults, especially in considering their size and the impact they may have on health care systems and mental health services. The current study examined the relationship between cohort and various measures of gambling attitudes and beliefs with problem gambling behaviours. It was found that Baby Boomers gambling beliefs in relation to luck and perseverance and illusions of control were more associated with problem gambling behaviours than the Silent Generation, their predecessors. A perceived inability to stop gambling went on to classify probable problem gamblers from probable non-problem gamblers in Baby Boomers compared to the Silent Generation. However, one of the most robust and somewhat unexpected findings of the current study was how

Generation X differed from Baby Boomers in terms of gambling beliefs related to problem gambling.

In addition to the main analysis which focused on attitudes and beliefs about gambling, other areas examined in the current study looked at gambling consequences and gambling passion. Overall it was found that Generation X was most likely to report consequences to gambling of the three cohorts. Gambling passion proved to be an interesting addition to the study, further differentiating problem gamblers from non-problem gamblers in Baby Boomers versus the Silent Generation. More specifically, high obsessive passion, as well as low harmonious passion each classified probable problem gamblers from non-problem gamblers in Baby Boomers.

Overall, the theory that cohorts would differ in terms of their gambling beliefs was supported, however attitudes did not differ significantly. Our results from this study highlight the importance of examining cohort effects when considering the course and maintenance of problem gambling. With more research into gambling beliefs and cohorts, findings from the current study may help in the development of effective preventative and treatment programs for problem gambling.

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## Appendix A

## Demographics Questionnaire

Study ID \_\_\_\_\_

**Gambling and Attitudes Survey**

Today's Date \_\_\_\_\_

Sex  Male  Female

Date of Birth (MM/DD/YYYY) \_\_\_/\_\_\_/\_\_\_ Age \_\_\_\_\_

## Marital Status

Married or Common-law  Never Married  
 Widow/Widower  Separated/Divorced

Where do you live?  Northern Ontario  Southern Ontario  
 Other \_\_\_\_\_

## Race/Ethnicity

White (Caucasian)  First Nations/Aboriginal  
 Black  Asian  
 Mixed  Other \_\_\_\_\_

## Religious Affiliation

Catholic  Protestant  Christian Orthodox  
 Jewish  Buddhist  Hindu  
 Muslim  Sikh  Eastern (e.g., Shinto)  
 Other \_\_\_\_\_  No Religious Affiliation

Strength of Religious Beliefs  N/A

Not Strong At All  Not Very Strong  Somewhat Strong  Very Strong  Extremely Strong

Education: Highest level completed

- None                       College or Technical Completed  
 Elementary                 Some University (Undergraduate)  
 Some High School         University Undergraduate Completed  
 High School Completed    Post Graduate Degree (e.g., Master's, Ph.D.)  
 Some College or Technical

Work/Employment Status (check as many that currently apply)

- Employed Full-time       Employed Part-time       Retired  
 Unemployed               Homemaker               Student  
 Social Assistance/Disability

Combined Household Gross Income (before taxes)

- \$0 - \$19,999               \$40,000 - \$59,999       \$80,000 - \$99,999  
 \$20,000 - \$39,999       \$60,000 - \$79,999       \$100,000 +

Support: How much support do you feel you receive from family or friends when you need it?

- Not enough     Some     Adequate     Plenty     More than Needed

Which of the following social activities do you regularly (daily, weekly, or monthly basis) participate in?

- Visiting with friends       Community activities       Social functions  
 Exercise/Fitness             Religious services           Political events  
 Volunteering                 Dinner out or the movies    Cards/Games

How many people in your household are aged 19 or older (including yourself)? \_\_\_\_\_

Do you own or regularly use a cell phone?

- No  
 Yes a regular cellphone  
 Yes a smartphone or android device (e.g., iPhone, Blackberry)

Would you consider gambling through a cellphone application or application on another device such as an iPad, Samsung Galaxy, or e-reader?

No       Maybe/Depends       Yes

Do you have internet at home or regular access to the internet elsewhere?

No       Yes

Would you consider gambling over the internet (indicate yes if you have gambled on the internet in the past)?

No       Maybe/Depends       Yes

*Note: Gambling is defined as risking money on the outcome of a chance event in the hope of winning something of greater value. It can include the purchase of **lottery tickets, scratch tickets, or pull tabs, charity raffles, playing bingo, slot machines or other casino games, Internet gambling, or betting on horses or sports games.***

According to the above definition of gambling, how many people in your household gamble: Occasionally \_\_\_\_ or Regularly \_\_\_\_?

Have you ever participated in any gambling or betting activities that involve money (including activities described above, e.g., bingo, scratch tickets, and raffles)?

Yes       No

## Appendix B

## South Oaks Gambling Screen (SOGS)

B1. Please indicate which of the following types of gambling you have done in **your lifetime**.

For each type, mark one answer: “not at all”, “less than once a week”, or “once a week or more”.

<b>Not at all</b>	<b>Less than once a week</b>	<b>Once a week or more</b>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played cards for money
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bet on horses, dogs, or other animals (in off-track betting, at the track, or with a bookie)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bet on sports (parlay cards, with a bookie)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played dice games (including craps, over and under, or other dice games) for money
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Went to a casino (legal or otherwise)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played the numbers or bet on lotteries
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played bingo
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played the stock and/or commodities market
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Played slot machines, poker machines, or other gambling machines
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Bowled, shot pool, played golf, or played some other game of skill for money

B2. What is the largest amount of money you have ever gambled with on any one day?

- |   |   |
|---|---|
| <input type="checkbox"/> Never have gambled         | <input type="checkbox"/> More than \$100 up to \$1,000    |
| <input type="checkbox"/> \$1 or less                | <input type="checkbox"/> More than \$1,000 up to \$10,000 |
| <input type="checkbox"/> More than \$1 up to \$10   | <input type="checkbox"/> More than \$10,000               |
| <input type="checkbox"/> More than \$10 up to \$100 |   |

B3. Do (did) your parents have a gambling problem?

- Both my father and mother gamble (or gambled) too much
- My father gambles (or gambled) too much
- My mother gambles (or gambled) too much
- Neither one gambles (or gambled) too much

B4. When you gamble, how often do you go back another day to win back money you lost?

- Never
- Some of the time (less than half the time) I lost
- Most of the time I lost
- Every time I lost

B5. Have you ever claimed to be winning money gambling but weren't really? In fact, you lost?

- Never (or never gamble)
- Yes, less than half the time I lost
- Yes, most of the time

B6. Do you feel you have ever had a problem with gambling?

- No       Yes, in the past, but not now       Yes

B7. Did you ever gamble more than you intended to?       Yes       No

B8. Have people criticized your gambling?       Yes       No

B9. Have you ever felt guilty about the way you gamble or what happens when you gamble?  Yes  No

B10. Have you ever felt like you would like to stop gambling but you didn't think you could?  Yes  No

B11. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in your life?  Yes  No

B12. Have you ever argued with people you live with over how you handle money?  Yes  No

B13. (If you answered "yes" to question 12:) Have money arguments ever centred on your gambling?  Yes  No

B14. Have you ever borrowed from someone and not paid them back as a result of your gambling?  Yes  No

B15. Have you ever lost time from work (or school) due to gambling?  Yes  No

B16. If you borrowed money to gamble or to pay gambling debts, who or where did you borrow from? (check "yes" or "no" for each)

a. from household money  Yes  No

b. from your spouse  Yes  No

c. from other relatives or friends  Yes  No

d. from banks, loan companies, or credit unions  Yes  No

e. from credit cards  Yes  No

f. from loan sharks  Yes  No

g. you cashed in stocks, bonds, or other securities  Yes  No

h. you sold personal or family property  Yes  No

i. you borrowed on your chequing account (passed bad cheques)  Yes  No

j. you have (had) a credit line with a bookie  Yes  No

k. you have (had) a credit line with a casino  Yes  No



## Appendix C

## Canadian Problem Gambling Index - Revised

C1a. In the past 12 months, how often did you bet or spend money on Lottery tickets like the 649, Super 7, or POGO?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1b. In the past 12 months, how often did you buy daily lottery tickets like Pick 3?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1c. In the past 12 months, how often did you buy instant win or scratch tickets like break open, pull tab, or Nevada strips?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1d. In the past 12 months, how often did you buy raffle or fundraising tickets?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1e. In the past 12 months, how often did you bet on horse races (i.e. live at the track and/or off-track)?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1f. In the past 12 months, how often did you play bingo?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

In the past 12 months, have you gambled at any type of casino including illegal or charity casinos?

- |  |   |
|--|---|
| <input type="checkbox"/> Yes [continue to C1g] | <input type="checkbox"/> No [go to C1m] |
|--|---|

C1g. In the past 12 months, how often did you bet or spend money on coin slot machines or VLT's in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1h. In the past 12 months, how often did you play poker in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1i. In the past 12 months, how often did you play blackjack in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1j. In the past 12 months, how often did you play roulette in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1k. In the past 12 months, how often did you play keno in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1l. In the past 12 months, how often did you play craps in a casino?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1m. In the past 12 months, how often did you play video lottery terminals (VLTs)

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1n. In the past 12 months, how often did you play a sports lottery like Sport Select (e.g. Pro Line, Over/Under, Point Spread)?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1o. In the past 12 months, how often did you bet or spend money on sports pools?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1p. In the past 12 months, how often did you bet on cards, or board games with family or friends?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1q. In the past 12 months, how often did you bet or spend money on games of skill such as pool, bowling, or darts?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |
| <input type="checkbox"/> About once/month        | <input type="checkbox"/> Daily             |

C1r. In the past 12 months, how often did you bet on arcade or video games?

- |  |  |
|--|--|
| <input type="checkbox"/> Never                   | <input type="checkbox"/> 2-3 times/month   |
| <input type="checkbox"/> Between 1-5 times/year  | <input type="checkbox"/> About once/week   |
| <input type="checkbox"/> Between 6-11 times/year | <input type="checkbox"/> 2 to 6 times/week |

About once/month Daily

C1s. In the past 12 months, how often did you gamble on the Internet?

 Never 2-3 times/month Between 1-5 times/year About once/week Between 6-11 times/year 2 to 6 times/week About once/month Daily

C1t. In the past 12 months, how often did you bet on sports with a bookie?

 Never 2-3 times/month Between 1-5 times/year About once/week Between 6-11 times/year 2 to 6 times/week About once/month Daily

C1u. In the past 12 months, how often did you personally invest in stocks, options, or commodities markets?

 Never 2-3 times/month Between 1-5 times/year About once/week Between 6-11 times/year 2 to 6 times/week About once/month Daily

C2. How much money, not including winnings, do you typically spend in a month on...

C2a. lottery tickets like the 649, Super 7 or POGO? \_\_\_\_\_

C2b. daily lottery tickets like Pick 3? \_\_\_\_\_

C2c. Instant win or scratch tickets like break open, pull tab or Nevada strips? \_\_\_\_\_

C2d. raffle or fundraising tickets? \_\_\_\_\_

C2e. live horse races at the track and/or off track? \_\_\_\_\_

C2f. bingo? \_\_\_\_\_

C2g. coin slot machines or VLT's? \_\_\_\_\_

C2h. poker in a casino? \_\_\_\_\_

C2i. blackjack in a casino? \_\_\_\_\_

C2j. roulette in a casino? \_\_\_\_\_

C2k. keno in a casino? \_\_\_\_\_

C2l. craps in a casino? \_\_\_\_\_

C2m. video lottery terminals (VLTs) outside casinos? \_\_\_\_\_

C2n. sports lotteries like Sport Select (or, Pro Line, Over/Under, Point Spread)? \_\_\_\_\_

C2o. sports pools? \_\_\_\_\_

C2p. cards, or board games with family or friends?

C2q. games of skill such as pool, bowling or darts?

C2r. arcade or video games? \_\_\_\_\_

C2s. gambling on the internet? \_\_\_\_\_

C2t. sports with a bookie? \_\_\_\_\_

C2u. How much money, INCLUDING profits from earlier investments, do you spend on stocks, options, or commodities? \_\_\_\_\_

**Thinking about the past 12 months,**

C3. How often have you bet more than you could really afford to lose?

Never     Sometimes     Most of the time     Almost always

C4. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?

Never     Sometimes     Most of the time     Almost always

C5. How often have you gone back another day to try to win back the money you lost?

Never     Sometimes     Most of the time     Almost always

C6. How often have you borrowed money or sold anything to get money to gamble?

Never     Sometimes     Most of the time     Almost always

C7. How often have you felt that you might have a problem with gambling?

Never     Sometimes     Most of the time     Almost always

C8. How often has your gambling caused you any health problems, including stress or anxiety?

Never     Sometimes     Most of the time     Almost always

C9. How often have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?

Never     Sometimes     Most of the time     Almost always

C10. How often has your gambling caused any financial problems for you or

your household?

Never     Sometimes     Most of the time     Almost always

C11. How often have you felt guilty about the way you gamble or what happens when you gamble?

Never     Sometimes     Most of the time     Almost always

C12. How often have you lied to family members or others to hide your gambling?

Never     Sometimes     Most of the time     Almost always

C13. How often have you bet or spent more money than you wanted to on gambling?

Never     Sometimes     Most of the time     Almost always

C14. How often have you wanted to stop betting money or gambling, but didn't think you could?

Never     Sometimes     Most of the time     Almost always

Please indicate how strongly you agree or disagree with the following two statements:

C15. After losing many times in a row, you are more likely to win.

Strongly Disagree     Disagree     Agree     Strongly Agree

C16. You could win more if you used a certain system or strategy.

Strongly Disagree     Disagree     Agree     Strongly Agree

C17. Do you remember a big win when you first started gambling?

Yes     No

C18. Do you remember a big LOSS when you first started gambling?

Yes     No

C19. Has anyone in your family EVER had a gambling problem?

Yes     No

C20. Has anyone in your family EVER had an alcohol or drug problem?

Yes     No

C21. IN THE LAST 12 MONTHS, have you used alcohol or drugs while gambling?

Yes     No

C22. In the last 12 months, have you gambled while drunk, or high?

Yes     No

C23. Have you felt you might have an alcohol or drug problem?

Yes  No

C24. In the last 12 months, if something painful happened in your life, did you have the urge to gamble?

Yes (includes doing as well as having the urge)  No

C25. In the last 12 months, if something painful happened in your life, did you have the urge to have a drink?

Yes (includes doing as well as having the urge)  No

C26. In the last 12 months, if something painful happened in your life did you have the urge to use drugs? or medication?

Yes (includes doing as well as having the urge)  No

C27. Still thinking about the last 12 months, have you been under a doctor's care because of physical or emotional problems brought on by stress?

Yes  No

C28. Have you felt seriously depressed?

Yes  No

C29. Have you seriously thought about or attempted suicide as a result of your gambling?

Yes  No



## Appendix D

## Gamblers' Beliefs Questionnaire

Please read each of the following statements carefully and indicate to what extent you agree or disagree by writing the corresponding number on the line.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

- D1. I think of gambling as a challenge. \_\_\_\_
- D2. My knowledge and skill in gambling contribute to the likelihood that I will make money. \_\_\_\_
- D3. My choices or actions affect the game on which I am betting. \_\_\_\_
- D4. If I am gambling and losing, I should continue because I don't want to miss a win. \_\_\_\_
- D5. I should keep track of previous winning bets so that I can figure out how I should bet in the future. \_\_\_\_
- D6. When I am gambling, "near misses" or times when I almost win remind me that if I keep playing I will win. \_\_\_\_
- D7. Gambling is more than just luck. \_\_\_\_
- D8. My gambling wins are evidence that I have skill and knowledge related to gambling. \_\_\_\_
- D9. I have a "lucky" technique that I use when I gamble. \_\_\_\_
- D10. In the long run, I will win more money than I will lose gambling. \_\_\_\_
- D11. Even though I may be losing with my gambling strategy or plan, I must maintain that strategy or plan because I know it will eventually come through for me. \_\_\_\_
- D12. There are certain things I do when I am betting (for example, tapping a certain number of times, holding a lucky coin in my hand, crossing my fingers, etc.) which increase the chances that I will win. \_\_\_\_
- D13. If I lose money gambling, I should try to win it back. \_\_\_\_
- D14. Those who don't gamble much don't understand that gambling success requires dedication and a willingness to invest some money. \_\_\_\_
- D15. Where I get money to gamble doesn't matter because I will win and pay it back. \_\_\_\_
- D16. I am pretty accurate at predicting when a "win" will occur. \_\_\_\_

- D17. Gambling is the best way for me to experience excitement. \_\_\_\_
- D18. If I continue to gamble, it will eventually pay off and I will make money. \_\_\_\_
- D19. I have more skills and knowledge related to gambling than most people who gamble. \_\_\_\_
- D20. When I lose at gambling, my losses are not as bad if I don't tell my loved ones. \_\_\_\_
- D21. I should keep the same bet even when it hasn't come up lately because it is bound to win. \_\_\_\_

## Appendix E

## Gambling Attitudes and Beliefs Survey

For each of the following statements please indicate the extent to which you agree or disagree by writing the corresponding number on the line:

1		4
Strongly Disagree	2 Disagree	3 Agree
	3 Agree	4 Strongly Agree

- E1. Gambling makes me feel really alive. \_\_\_\_
- E2. If I have not won any of my bets for a while, I am probably due for a big win. \_\_\_\_
- E3. There's no way I can know if I will have good or bad luck. \_\_\_\_
- E4. I respect a person who makes very large bets and remains calm and cool. \_\_\_\_
- E5. Sometimes I forget about the time when I am gambling. \_\_\_\_
- E6. I know when I'm on a streak. \_\_\_\_
- E7. When I gamble it is important to act as if I am calm, even if I am not. \_\_\_\_
- E8. Some people are unlucky. \_\_\_\_
- E9. I feel great when I win a bet. \_\_\_\_
- E10. It is important to feel confident when I'm gambling. \_\_\_\_
- E11. Gambling is boring. \_\_\_\_
- E12. Some people are lucky to have around when I'm gambling. \_\_\_\_
- E13. People who gamble are more daring and adventurous than those who never gamble. \_\_\_\_
- E14. I don't like to quit when I'm losing. \_\_\_\_
- E15. It takes some skill to be successful at craps. \_\_\_\_
- E16. Sometimes I just know I'm going to have good luck. \_\_\_\_
- E17. People who make big bets can be very sexy. \_\_\_\_
- E18. If you have never experienced the excitement of making a big bet, you have never lived.  
\_\_\_\_
- E19. No matter what the game is, there are betting strategies that can help you win. \_\_\_\_
- E20. I have carried a lucky charm when I gambled. \_\_\_\_
- E21. If I lose at gambling it is important to act calm. \_\_\_\_
- E22. I usually don't get very excited when I gamble. \_\_\_\_

- E23. Roulette takes more skill than playing the lottery. \_\_\_\_
- E24. Casinos are glamorous, exciting places. \_\_\_\_
- E25. If I have been lucky lately, I should press my bets. \_\_\_\_
- E26. I feel angry when I lose at gambling. \_\_\_\_
- E27. If I were feeling down, gambling would probably pick me up.
- E28. I must be familiar with a gambling game if I am going to win.
- E29. Some people can bring bad luck to other people. \_\_\_\_
- E30. It's important to act a certain way when I win. \_\_\_\_
- E31. If I lose, it is important to stick with it until I get even. \_\_\_\_
- E32. To be successful at gambling, I must be able to identify streaks. \_\_\_\_
- E33. If I have lost bets recently, my luck is bound to change. \_\_\_\_
- E34. It's important to be a gracious winner. \_\_\_\_
- E35. I like gambling because it helps me to forget my everyday problems. \_\_\_\_

## Appendix F

## Gambling Related Cognitions Scale

Please indicate the extent to which you agree with the value expressed in each statement by writing the corresponding number on the line:

1	2	3	4	5	6	7
Strongly Disagree	Moderately Disagree	Mildly Disagree	Neutral	Mildly Agree	Moderately Agree	Strongly Agree

- F1. Gambling makes me happier. \_\_\_\_\_
- F2. I can't function without gambling. \_\_\_\_\_
- F3. Praying helps me win. \_\_\_\_\_
- F4. Losses when gambling, are bound to be followed by a series of wins. \_\_\_\_\_
- F5. Relating my winnings to my skill and ability makes me continue gambling. \_\_\_\_\_
- F6. Gambling makes things seem better. \_\_\_\_\_
- F7. It is difficult to stop gambling as I am so out of control. \_\_\_\_\_
- F8. Specific numbers and colours can help increase my chances of winning. \_\_\_\_\_
- F9. A series of losses will provide me with a learning experience that will help me win later. \_\_\_\_\_
- F10. Relating my losses to bad luck and bad circumstances makes me continue gambling. \_\_\_\_\_
- F11. Gambling makes the future brighter. \_\_\_\_\_
- F12. My desire to gamble is so overpowering. \_\_\_\_\_
- F13. I collect specific objects that help increase my chances of winning. \_\_\_\_\_
- F14. When I have a win once, I will definitely win again. \_\_\_\_\_
- F15. Relating my losses to probability makes me continue gambling. \_\_\_\_\_
- F16. Having a gamble helps reduce tension and stress. \_\_\_\_\_
- F17. I'm not strong enough to stop gambling. \_\_\_\_\_
- F18. I have specific rituals and behaviours that increase my chances of winning. \_\_\_\_\_
- F19. There are times that I feel lucky and thus, gamble those times only. \_\_\_\_\_
- F20. Remembering how much money I won last time makes me continue gambling. \_\_\_\_\_
- F21. I will never be able to stop gambling. \_\_\_\_\_

- F22. I have some control over predicting my gambling wins. \_\_\_\_\_
- F23. If I keep changing my numbers, I have less chances of winning than if I keep the same numbers every time. \_\_\_\_\_

## Appendix G Gambling

## Attitude Survey

This is a questionnaire about general attitudes toward gambling and about specific attitudes toward gambling on horse races, on lotteries, and at casinos. There are also questions about the role of women in society, health care, and so on about which we would like your opinion. Please give your personal opinions about each item by indicating the corresponding number:

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Mildly Disagree	Mildly Agree	Moderately Agree	Strongly Agree

- G1. I enjoy gambling. \_\_\_\_
- G2. I am a liberal thinker. \_\_\_\_
- G3. I think gambling is good for Canada. \_\_\_\_
- G4. I enjoy buying lottery tickets. \_\_\_\_
- G5. I tend to act like a left-winger and approve of left-wing policies. \_\_\_\_
- G6. I feel happy that people on welfare will now have to work for their money. \_\_\_\_
- G7. I enjoy betting on horse races. \_\_\_\_
- G8. I support the right of Canadians to gamble in casinos as often as they want. \_\_\_\_
- G9. I tend to think conservatively. \_\_\_\_
- G10. I detest betting on horse races. \_\_\_\_
- G11. I gamble in casinos when the opportunity arises. \_\_\_\_
- G12. I approve of increased federal taxes to provide more social welfare programs. \_\_\_\_
- G13. I want to bet on horse races. \_\_\_\_
- G14. I detest gambling casinos. \_\_\_\_
- G15. I am in favour of abortion rights for women. \_\_\_\_
- G16. I want to buy lottery tickets. \_\_\_\_
- G17. Many people on welfare are simply lazy. \_\_\_\_
- G18. I enjoy gambling in casinos. \_\_\_\_
- G19. I think betting on horse races is good for our society. \_\_\_\_

- G20. We need Prime Ministers in Canada that are more like Former U.S. Presidents Jimmy Carter and Lyndon Johnson. \_\_\_\_
- G21. I feel excited when I am around people who bet on horse races. \_\_\_\_
- G22. I tend to favour the Conservative or right-wing way of thinking. \_\_\_\_
- G23. I am in favour of capital punishment (by lethal injection, etc.) for murderers. \_\_\_\_
- G24. Gambling in casinos is acceptable. \_\_\_\_
- G25. I gamble when the opportunity arises. \_\_\_\_
- G26. I think our government in Ottawa is too big and too controlling. \_\_\_\_
- G27. I feel comfortable around people who frequently play the lottery. \_\_\_\_
- G28. I support the right of Canadians to gamble as often as they want. \_\_\_\_
- G29. I am a thrill seeker. \_\_\_\_
- G30. I want to gamble. \_\_\_\_
- G31. I think that gay and lesbian marriages are a bad idea. \_\_\_\_
- G32. Buying lottery tickets is acceptable. \_\_\_\_
- G33. When people talk about betting on horses, I want to bet. \_\_\_\_
- G34. Catholic priests deserve the freedom to marry, just like anyone else. \_\_\_\_
- G35. I feel excited when I am around people who gamble. \_\_\_\_
- G36. When people talk about buying a lottery ticket, I want to buy one. \_\_\_\_
- G37. We need Prime Ministers in Canada that are more like Former U.S. Presidents Ronald Reagan and George Bush. \_\_\_\_
- G38. When people talk about gambling, I want to gamble. \_\_\_\_
- G39. When possible, I vote for the Conservative Party of Canada. \_\_\_\_
- G40. Betting on horse races is acceptable. \_\_\_\_
- G41. It would be a good idea if there were sex education classes in elementary schools. \_\_\_\_
- G42. I feel comfortable around people who frequently gamble in casinos. \_\_\_\_
- G43. I bet on horse races when the opportunity arises. \_\_\_\_
- G44. Certain occupations, like firefighters, should be restricted to men. \_\_\_\_
- G45. It's OK if there is gambling in my town. \_\_\_\_
- G46. I want to gamble in casinos. \_\_\_\_
- G47. I feel upset when I see advertisements that promote the provincial lottery. \_\_\_\_
- G48. It's OK if there is betting at horse racing tracks in my town. \_\_\_\_



- G49. I would vote for a woman to become Prime Minister of Canada. \_\_\_\_
- G50. The provincial lottery is detrimental to our society. \_\_\_\_
- G51. It would be better if casino gambling was banned in my province. \_\_\_\_
- G52. I feel happy when there is a Conservative majority. \_\_\_\_
- G53. I buy lottery tickets when the opportunity arises. \_\_\_\_
- G54. I like to take risks. \_\_\_\_
- G55. It's OK if there is casino gambling in my town. \_\_\_\_
- G56. All Canadians should be entitled to government-sponsored free or low-cost health care. \_\_\_\_
- G57. Gambling is acceptable. \_\_\_\_
- G58. I tend to vote for left-wing parties (e.g., NDP, Liberal, Green). \_\_\_\_
- G59. I detest provincial lotteries. \_\_\_\_



## Appendix I

## Balanced Inventory of Desirable Responding Version 6 - Form 40A

Using the scale below as a guide, write a number beside each statement to indicate how true it is.

+	+	+	+	+	+	+
1	2	3	4	5	6	7
not true			somewhat			very true

- I1. My first impressions of people usually turn out to be right. \_\_\_\_
- I2. It would be hard for me to break any of my bad habits. \_\_\_\_
- I3. I don't care to know what other people really think of me. \_\_\_\_
- I4. I have not always been honest with myself. \_\_\_\_
- I5. I always know why I like things. \_\_\_\_
- I6. When my emotions are aroused, it biases my thinking. \_\_\_\_
- I7. Once I've made up my mind, other people can seldom change my opinion. \_\_\_\_
- I8. I am not a safe driver when I exceed the speed limit. \_\_\_\_
- I9. I am fully in control of my own fate. \_\_\_\_
- I10. It's hard for me to shut off a disturbing thought. \_\_\_\_
- I11. I never regret my decisions. \_\_\_\_
- I12. I sometimes lose out on things because I can't make up my mind soon enough. \_\_\_\_
- I13. The reason I vote is because my vote can make a difference. \_\_\_\_
- I14. My parents were not always fair when they punished me. \_\_\_\_
- I15. I am a completely rational person. \_\_\_\_
- I16. I rarely appreciate criticism. \_\_\_\_
- I17. I am very confident of my judgments \_\_\_\_
- I18. I have sometimes doubted my ability as a lover. \_\_\_\_
- I19. It's all right with me if some people happen to dislike me.
- I20. I don't always know the reasons why I do the things I do.
- I21. I sometimes tell lies if I have to. \_\_\_\_
- I22. I never cover up my mistakes. \_\_\_\_
- I23. There have been occasions when I have taken advantage of someone. \_\_\_\_

- I24. I never swear. \_\_\_\_\_
- I25. I sometimes try to get even rather than forgive and forget. \_\_\_\_\_
- I26. I always obey laws, even if I'm unlikely to get caught. \_\_\_\_\_
- I27. I have said something bad about a friend behind his/her back. \_\_\_\_\_
- I28. When I hear people talking privately, I avoid listening. \_\_\_\_\_
- I29. I have received too much change from a salesperson without telling him or her. \_\_\_\_\_
- I30. I always declare everything at customs. \_\_\_\_\_
- I31. When I was young I sometimes stole things. \_\_\_\_\_
- I32. I have never dropped litter on the street. \_\_\_\_\_
- I33. I sometimes drive faster than the speed limit. \_\_\_\_\_
- I34. I never read sexy books or magazines. \_\_\_\_\_
- I35. I have done things that I don't tell other people about. \_\_\_\_\_
- I36. I never take things that don't belong to me. \_\_\_\_\_
- I37. I have taken sick-leave from work or school even though I wasn't really sick. \_\_\_\_\_
- I38. I have never damaged a library book or store merchandise without reporting it. \_\_\_\_\_
- I39. I have some pretty awful habits. \_\_\_\_\_
- I40. I don't gossip about other people's business. \_\_\_\_\_

## Appendix J

## Personality Research Form Infrequency Scale

Please read each statement below. Indicate TRUE if you agree with the statement or it describes you and FALSE if you disagree or it is not descriptive of you.

- |   |                               |                                |
|---|-------------------------------|--------------------------------|
| 1. I could easily count from one to twenty-five.        | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 2. I have never talked to anyone by telephone.          | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 3. I make all my own clothes and shoes                  | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 4. Things with sugar in them usually taste sweet to me. | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 5. I have never had any hair on my head.                | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 6. I have never ridden in an automobile.                | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 7. I try to get at least some sleep every night.        | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |
| 8. I have attended school at some time during my life.  | <input type="checkbox"/> TRUE | <input type="checkbox"/> FALSE |

## Appendix K Participant

## Cover Letter

Dear Potential Participant,

Thank you for your interest in our research study entitled “Gambling attitudes associated with problem gambling: The cohort effect of Baby Boomers.” This study is being conducted by Jessica Tanner, in partial fulfillment of the Master of Clinical Psychology program at Lakehead University, and is supervised by Dr. Dwight Mazmanian, Associate Professor of Psychology at Lakehead University.

The gambling industry has targeted older adults through gambling incentives for many years and gambling is seen as an enjoyable and acceptable past-time by many. The current research aims to better understand the association between certain attitudes and beliefs with problem gambling behaviours. More specifically we are interested to see if there are differences between different generations of adults.

There are no known physical risks associated with participating in the current study; however you may feel some minor psychological discomfort when responding to some of the questions. The survey that you are asked to complete consists of several measures of gambling behaviour. It is anticipated that the survey will take you 1 to 1.5 hours to complete with a scheduled break in between. Participation is completely voluntary and your survey information is anonymous. No identifying information will be collected and you are free to withdraw from the study or to leave questions blank for any reason, however due to the anonymous nature of the survey, responses cannot be withdrawn after submission of the completed questionnaire. Answering all of the items without skipping any would be greatly appreciated and useful for the current study. Completed surveys will be kept in secure storage at Lakehead University for five years and only the researcher and Dr. Mazmanian will have access to the data. Furthermore, it is the researcher’s intention to publish and present the outcomes from the study. Should you be interested in the results you may provide your name and contact information to the researcher and the results will be sent to you once the study is complete.

Finally, to show our gratitude your name and contact information will be entered into a random draw for one of three \$50 gift-cards to your choice of Swiss Chalet, Tim Horton’s, or Chapters/Indigo. Instructions on how to enter into the draw for the \$50 gift cards will be presented to you at the end of the survey. If you would like to participate in the current study please proceed to the questionnaire. Your return of the completed questionnaire will be considered your implied consent to participate.

Thank you for your interest,

Jessica Tanner  
Masters of Clinical Psychology Student

Dwight Mazmanian  
Associate Professor

ghstudy@lakeheadu.ca  
807-343-8943

dmazmani@lakeheadu.ca  
807-343-8257

This study has been approved by the Lakehead University Research Ethics Board. If you have any questions related to the ethics of the research please contact Sue Wright at the Research Ethics Board at 807-343-8283 or [research@lakeheadu.ca](mailto:research@lakeheadu.ca).

## Appendix L

**DEBRIEFING**

**(Please keep this page for your information)**

Thank you for your participation in this research project on gambling attitudes and beliefs. We hope that this study will further our understanding of the associations between problem gambling and gambling attitudes and beliefs within specific generations. A summary of the results can be made available to you by mail or email once the study has been completed. If you are interested in receiving these research results please provide your name, phone number, and mailing or email address to the researcher.

Furthermore, if you would like to be entered into the draw for one of three **\$50 gift cards** to Swiss Chalet, Tim Horton's, or Chapters/Indigo please let the researcher know by:

1. writing down your contact information and name if you completed the questionnaire in-person, or
2. if you completed the questionnaire by regular mail or through the internet please email [ghstudy@lakeheadu.ca](mailto:ghstudy@lakeheadu.ca) or call 807-343-8943 and provide your name and contact information.

If you have specific questions about the survey you may contact Jessica Tanner (807-343-8943), Dr. Dwight Mazmanian (807-343-8257), or email [ghstudy@lakeheadu.ca](mailto:ghstudy@lakeheadu.ca).

If completing this survey has raised any issues about gambling that you would like to discuss, you may contact the Ontario Problem Gambling Helpline at 1-888-230-3505.

If you are distressed or have other personal issues you would like to discuss you may contact the Crisis Response Program through the Canadian Mental Health Association at 807-346-8282.

If you are interested in learning more about gambling-related cognitions or myths and facts about gambling, please visit the following websites:

- [www.problemgambling.ca](http://www.problemgambling.ca) – Go to Gambling 101 and click on Information on Problem Gambling.
- [www.problemgamblinghelpline.ca](http://www.problemgamblinghelpline.ca) – Take a quiz to find out if you or someone you know is at risk of problem gambling.
- [www.responsiblegambling.org](http://www.responsiblegambling.org) – Go to Safer Play to learn about gambling beliefs and myths and click on M.A.R.G.I. to play a game that provides information that can help you make better decisions if you choose to gamble.
- [www.rgrc.org/en/problem-gambling/gambling-myths](http://www.rgrc.org/en/problem-gambling/gambling-myths) - Find a complete list of commonly held myths about gambling with explanations of the realities of gambling.